



January 29, 1998

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Distribution

**QUARTERLY ENVIRONMENTAL MONITORING EXCHANGE OF INFORMATION
MEETING - SMN-010-98**

The next Quarterly Environmental Monitoring Exchange of Information Meeting will be held on Tuesday, February 24, 1998 at 1:30 p.m. at the Broomfield Recreation/Seniors Center, 280 Lamar St., Broomfield. Please check the Senior Center agenda board upon arrival for the exact room location. Data for fourth quarter 1997 (October, November and December) will be presented. Included with this notice are quarterly reports from the third quarter 1997 (July, August and September) for the Site.

The Colorado Department of Public Health and Environment (CDPHE) is currently producing the agenda for this meeting. Please contact Deb Shaw, CDPHE, at 692-3421 for any questions concerning the agenda.

If you have any questions, please contact Steven Nesta at 966-6386.

Sincerely,

Stephen M. Nesta
Environmental Management & Compliance

SMN/nmb

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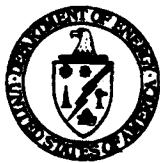
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Rocky Flats Environmental Technology Site

Quarterly Environmental Monitoring Report



July - September 1997

Rocky Flats Environmental Technology Site
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Rocky Flats Environmental Technology Site

Quarterly Environmental Monitoring Report

July - September Highlights

This report is produced and distributed quarterly as part of our ongoing Agreement in Principle and as a forum for the Rocky Flats Cleanup Agreement (RFCA) quarterly reporting requirement. Additional information about quarterly reporting will be formalized after completion of the Integrated Monitoring Plans (IMP) for the various media sampled.

Airborne Effluent

Isotopic analytical data for effluent samples collected during third quarter 1997 have not been completed by the subcontracted laboratories as a result of delays associated with laboratory outsourcing. Additionally, isotopic analytical data for second quarter 1997 was not received from the Analytical Projects Office at the time of report preparation. Completed isotopic data for both second and third quarters 1997 will be reported when available.

Gross alpha and gross beta screening for both second and third quarters 1997 effluent sampling locations are complete and all results are within typical and expected ranges.

Ambient Air

Isotopic analytical data for ambient air samples collected during third quarter 1997 have not been completed by the subcontracted laboratories as a result of delays associated with laboratory outsourcing. Minimal data from April and June 1997 were received from the Analytical Projects Office, but time constraints did not allow processing in time for inclusion in this report.

Meteorology and Climatology

Meteorology and Climatology data collected during third quarter 1997 are presented in this report. Meteorological data are routinely measured from instrumentation on a 61-meter tower located in the west buffer zone at an elevation of 1,870 meters (6,140 feet) above sea level. The Climatic summary for July and September 1997 are included in this report. Minor errors in the programming of the new database did not allow processing of the August 1997 data. The compass points and windrose displaying the frequencies of wind direction and speed illustrate the typically large diurnal wind changes at the Site. Data for July and September 1997 are complete. August 1997 data will be included when available.

Surface Water

Surface water analytical data collected during third quarter 1997 for NPDES/FFCA permit compliance are presented in this report. Included in the Discharge Monitoring Report (DMR) for July 1997, the Site reported an exceedance of the 7-day geometric mean limitation at the Sewage Treatment Plant (STP) for fecal coliform. Two samples collected during the week of July 20 - 26, 1997 (specifically July 23 and July 24) when calculated to determine geometric mean, resulted in 1058/100ml (number of colonies per 100 ml of sample). The 7-day limitation for this parameter is 400/100 ml. During this period there

were asphalt removal activities that required power outages at the STP. While the power was off, the sand filters were not in use. The STP was unable to use a backup power source to maintain sand filter usage because the safety requirements for the asphalt removal project required the entire area to be de-energized during the removal operation. No unusual turbidity levels that might contribute to the elevated coliform results were measured as a result of by-passing the sand filters during the asphalt removal and chlorine usage was at normal levels during this time period. All other analytical and operational data indicate that the STP was operating within normal parameters and limitations during the period of this exceedance. As a result of the short duration of the exceedance and lack of other parameters indicating an upset condition, the Site believed that this was an anomalous, one-time condition.

Quarterly whole effluent toxicity (WET) testing data for the period July to September 1997 were included in the DMR for September 1997. The sample collected for the STP during that quarter failed the WET test. Toxicity for fathead minnows was shown in a sample collected on July 2, 1997, however no toxicity was shown for ceriodaphnia. The most probable cause for the toxicity is the combined effect of the total ammonia concentration (20.7 mg/l) and slight elevation in pH (7.2 - 7.9 S.U.) during the course of the test, which resulted in the formation of un-ionized ammonia. No toxicity was observed in WET tests collected during the reported quarter. WET tests have a report only requirement at this time, and the presence of toxicity does not constitute an exceedance of a permit provision. All other reported analytical data are consistent with historical measurements and within permit limitations.

As part of the upgrades to the STP, an ultraviolet disinfection (UV) system was installed at the STP as a replacement for chlorine disinfection on September 29, 1997. Additionally, the effluent sampler was relocated from below the STP to the ultraviolet disinfection building on October 24, 1997. This new location samples the same water as at its previous location. The Environmental Protection Agency (EPA) was provided both verbal and written notification of the UV system replacement and of the location change for the effluent sampler.

A construction project to upgrade the outlet works at Pond B-5 is now underway. Normally, water from the STP effluent is discharged into Pond B-3, which discharges into Pond B-4, and then flows to Pond B-5. During the course of the construction project, water from the STP will be pumped from Pond B-3 to Pond A-3 via an above-ground pipeline. A request for permission to by-pass STP effluent water from Pond B-5 was provided to the EPA in July 1997. EPA's response, dated August 28, 1997, granted the by-pass through December 31, 1998. Modified operations began on September 8, 1997 and will continue through the duration of the project.

Hydrologic Monitoring and Rocky Flats Clean-up Agreement (RFCA) Monitoring

Analytical data for third quarter 1997 and any outstanding second quarter 1997 from samples collected for RFCA and Hydrologic monitoring programs are included in this report.

Location GS28 is no longer in service. Its function as a performance monitoring location, measuring water quality prior to, during, and after the removal of Building 889 has been completed. Flow data and analytical data for this location will no longer appear in quarterly reports.

Section 1: Air Data

Table 1-1 Plutonium and Americium Airborne Effluent Data

Month	Plutonium-239		Americium-241	
	Release (μCi)	C Maximum (pCi/m^3)	Release (μCi)	C Maximum (pCi/m^3)
CY 1996				
Jan – Dec	1.0590 ± 0.0918	0.0036 ± 0.0004	0.3274 ± 0.0351	0.0007 ± 0.0001
CY 1997				
January	0.0138 ± 0.0170	0.0001 ± 0.0001	0.0012 ± 0.0109	0.0001 ± 0.0001
February	0.0172 ± 0.0102	0.0001 ± 0.0001	$-0.006 \pm 0.0010a$	$0.0000 \pm 0.0000a$
March	0.0108 ± 0.0044	0.0003 ± 0.0001	-0.0070 ± 0.0049	0.0000 ± 0.0000
April	b	b	b	b
May	b	b	b	b
June	b	b	b	b
July	b	b	b	b
August	b	b	b	b
September	b	b	b	b
October				
November				
December				
Year to Date	0.0418 ± 0.0203	0.0003 ± 0.0000	-0.0064 ± 0.0120	0.0001 ± 0.0000

a Nine locations are missing because of failed laboratory analysis. No sample remains for reanalysis. Results are final.

b Incomplete laboratory analysis. Results will be reported when available.

Table 1-2 Uranium Airborne Effluent Data

Month	Uranium-233, -234		Uranium-238	
	Release (μ Ci)	C Maximum (μ Ci/m ³)	Release (μ Ci)	C Maximum (μ Ci/m ³)
CY 1996				
Jan - Dec	-0.0391 ± 1.1258	0.0016 ± 0.0006	1.2560 ± 1.1556	0.0033 ± 0.0006
CY 1997				
January	-0.0931 ± 0.0556	0.0009 ± 0.0009	-0.0860 ± 0.0651	0.0008 ± 0.0009
February	-0.0660 ± 0.0612	0.0003 ± 0.0006	-0.0618 ± 0.0632	0.0003 ± 0.0006
March	-0.1634 ± 0.0349	0.0017 ± 0.0009	-0.1853 ± 0.0341	0.0009 ± 0.0008
April	a	a	a	a
May	a	a	a	a
June	a	a	a	a
July	a	a	a	a
August	a	a	a	a
September	a	a	a	a
October				
November				
December				
Year to Date	-0.3226 ± 0.0898	0.0017 ± 0.0000	-0.3331 ± 0.0969	0.0009 ± 0.0000
a	Incomplete laboratory analysis. Results will be reported when available.			

Table 1-3 Tritium Airborne Effluent Data

Tritium		
Month	Release (μCi)	C Maximum (pCi/m^3)
CY 1996		
Jan - Dec	5.973	218 \pm 19
CY 1997		
January	0.691	60 \pm 20
February	0.316	29 \pm 23a
March	1.245	141 \pm 25b
April	0.563c	45 \pm 25c
May	0.222d	48 \pm 25b
June	e	e
July	e	e
August	e	e
September	e	e
October		
November		
December		
Year to Date	3.3036	141 \pm 25

- a One location is missing because of failed laboratory analysis. No sample remains for reanalysis. Results are final.
- b Two locations are missing because of failed laboratory analysis. No sample remains for reanalysis. Results are final.
- c Twelve locations are missing because of failed laboratory analysis. Results will be reported when available.
- d Seven locations are missing because of failed laboratory analysis. Results will be reported when available.
- e Incomplete laboratory analysis. Results will be reported when available.

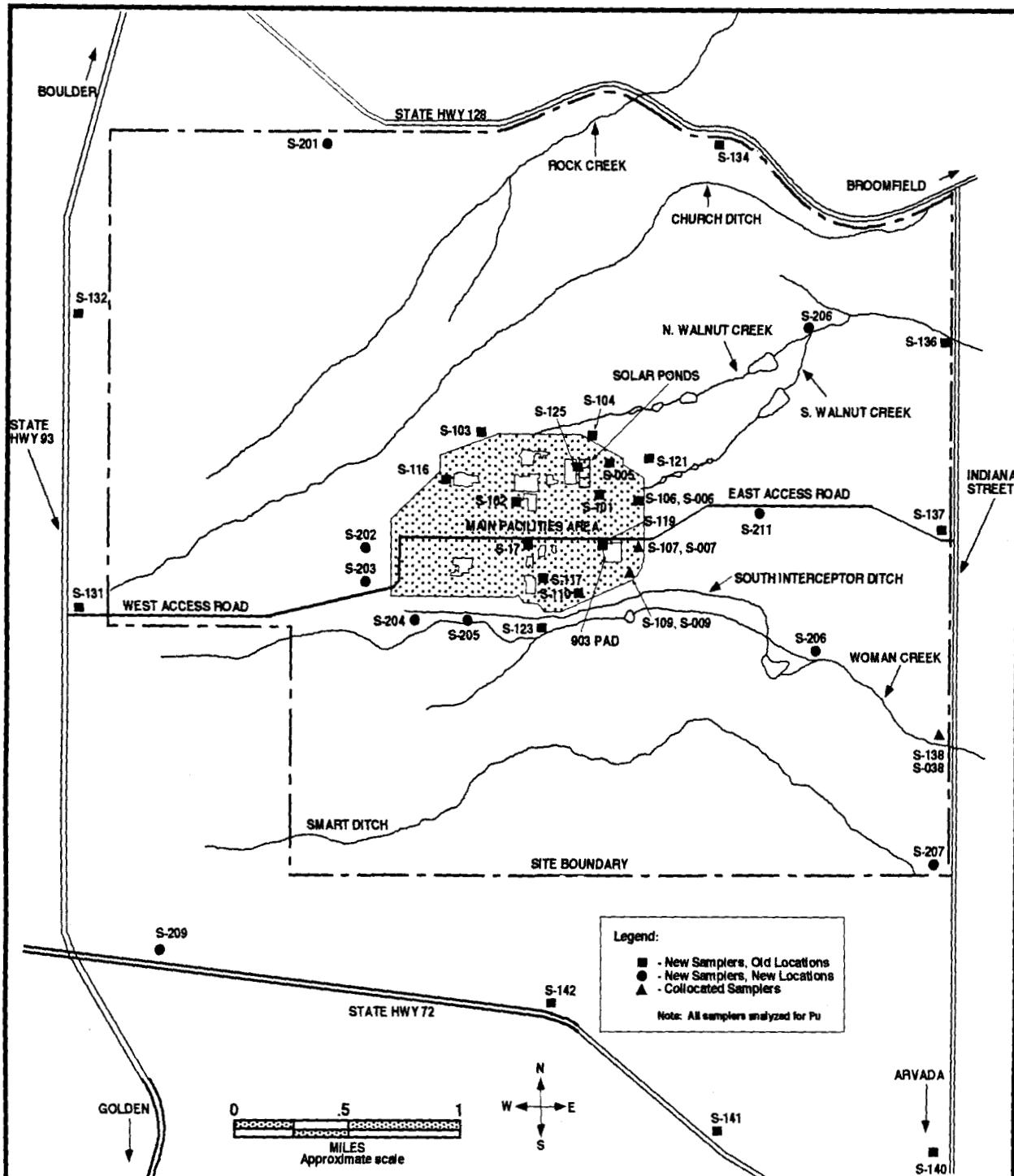


Figure 1-1 Location of Onsite and Perimeter Air Samplers

Table 1-4 Plutonium Concentrations in Ambient Air for Onsite Samplers^a

Location	On Date	Off Date	Flow (m³)	Fine Conc (pCi/m³)	Fine Error (pCi/m³)	Coarse Conc (pCi/m³)	Coarse Error (pCi/m³)	Total Conc (pCi/m³)	Total Error (pCi/m³)
S-107	b	b	b	b	b	b	b	b	b
S-107	b	b	b	b	b	b	b	b	b
S-107	b	b	b	b	b	b	b	b	b
S-007	b	b	b	b	b	b	b	b	b
S-007	b	b	b	b	b	b	b	b	b
S-007	b	b	b	b	b	b	b	b	b

a These data have not been corrected for temperature.

b Incomplete laboratory analysis. Results will be reported when available.

N/A = Not Applicable

Table 1-5 Plutonium -239 Concentrations in Ambient Air for Perimeter Samplers^a

Location	On Date	Off Date	Flow (m³)	Fine Conc (pCi/m³)	Fine Error (pCi/m³)	Coarse Conc (pCi/m³)	Coarse Error (pCi/m³)	Total Conc (pCi/m³)	Total Error (pCi/m³)
S-131	b	b	b	b	b	b	b	b	b
S-131	b	b	b	b	b	b	b	b	b
S-131	b	b	b	b	b	b	b	b	b
S-132	b	b	b	b	b	b	b	b	b
S-132	b	b	b	b	b	b	b	b	b
S-132	b	b	b	b	b	b	b	b	b
S-134	b	b	b	b	b	b	b	b	b
S-134	b	b	b	b	b	b	b	b	b
S-134	b	b	b	b	b	b	b	b	b
S-136	b	b	b	b	b	b	b	b	b
S-136	b	b	b	b	b	b	b	b	b
S-136	b	b	b	b	b	b	b	b	b
S-137	b	b	b	b	b	b	b	b	b
S-137	b	b	b	b	b	b	b	b	b
S-137	b	b	b	b	b	b	b	b	b
S-138	b	b	b	b	b	b	b	b	b
S-138	b	b	b	b	b	b	b	b	b
S-138	b	b	b	b	b	b	b	b	b

Table 1-5 Plutonium -239 Concentrations in Ambient Air for Perimeter Samplers^a
(continued)

Location	On Date	Off Date	Flow (m ³)	Fine Conc (pCi/m ³)	Fine Error (pCi/m ³)	Coarse Conc (pCi/m ³)	Coarse Error (pCi/m ³)	Total Conc (pCi/m ³)	Total Error (pCi/m ³)
S-140	b	b	b	b	b	b	b	b	b
S-140	b	b	b	b	b	b	b	b	b
S-140	b	b	b	b	b	b	b	b	b
S-141	b	b	b	b	b	b	b	b	b
S-141	b	b	b	b	b	b	b	b	b
S-141	b	b	b	b	b	b	b	b	b
S-142	b	b	b	b	b	b	b	b	b
S-142	b	b	b	b	b	b	b	b	b
S-142	b	b	b	b	b	b	b	b	b
S-201	b	b	b	b	b	b	b	b	b
S-201	b	b	b	b	b	b	b	b	b
S-201	b	b	b	b	b	b	b	b	b
S-207	b	b	b	b	b	b	b	b	b
S-207	b	b	b	b	b	b	b	b	b
S-207	b	b	b	b	b	b	b	b	b
S-209	b	b	b	b	b	b	b	b	b
S-209	b	b	b	b	b	b	b	b	b
S-209	b	b	b	b	b	b	b	b	b
S-038	b	b	b	b	b	b	b	b	b
S-038	b	b	b	b	b	b	b	b	b
S-038	b	b	b	b	b	b	b	b	b

a These data have not been corrected for temperature.

b Incomplete laboratory analysis. Results will be reported when available.

N/A = Not Applicable

Table 1-6 Uranium-233, -234 Concentrations in Ambient Air for Onsite Samplers^a

Location	On Date	Off Date	Flow (m³)	Fine Conc (pCi/m³)	Fine Error (pCi/m³)	Coarse Conc (pCi/m³)	Coarse Error (pCi/m³)	Total Conc (pCi/m³)	Total Error (pCi/m³)
S-107	b	b	b	b	b	b	b	b	b
S-107	b	b	b	b	b	b	b	b	b
S-107	b	b	b	b	b	b	b	b	b
S-007	b	b	b	b	b	b	b	b	b
S-007	b	b	b	b	b	b	b	b	b
S-007	b	b	b	b	b	b	b	b	b

a These data have not been corrected for temperature.

b Incomplete laboratory analysis. Results will be reported when available.

N/A = Not Applicable

Table 1-7 Uranium-233, -234 Concentrations in Ambient Air for Perimeter Samplers^a

Location	On Date	Off Date	Flow (m³)	Fine Conc (pCi/m³)	Fine Error (pCi/m³)	Coarse Conc (pCi/m³)	Coarse Error (pCi/m³)	Total Conc (pCi/m³)	Total Error (pCi/m³)
S-131	b	b	b	b	b	b	b	b	b
S-131	b	b	b	b	b	b	b	b	b
S-131	b	b	b	b	b	b	b	b	b
S-132	b	b	b	b	b	b	b	b	b
S-132	b	b	b	b	b	b	b	b	b
S-132	b	b	b	b	b	b	b	b	b
S-134	b	b	b	b	b	b	b	b	b
S-134	b	b	b	b	b	b	b	b	b
S-134	b	b	b	b	b	b	b	b	b
S-136	b	b	b	b	b	b	b	b	b
S-136	b	b	b	b	b	b	b	b	b
S-136	b	b	b	b	b	b	b	b	b
S-137	b	b	b	b	b	b	b	b	b
S-137	b	b	b	b	b	b	b	b	b
S-137	b	b	b	b	b	b	b	b	b
S-138	b	b	b	b	b	b	b	b	b
S-138	b	b	b	b	b	b	b	b	b
S-138	b	b	b	b	b	b	b	b	b
S-140	b	b	b	b	b	b	b	b	b
S-140	b	b	b	b	b	b	b	b	b
S-140	b	b	b	b	b	b	b	b	b

Table 1-7 Uranium-233, -234 Concentrations in Ambient Air for Perimeter Samplers^a
(continued)

Location	On Date	Off Date	Flow (m ³)	Fine Conc (pCi/m ³)	Fine Error (pCi/m ³)	Coarse Conc (pCi/m ³)	Coarse Error (pCi/m ³)	Total Conc (pCi/m ³)	Total Error (pCi/m ³)
S-141	b	b	b	b	b	b	b	b	b
S-141	b	b	b	b	b	b	b	b	b
S-141	b	b	b	b	b	b	b	b	b
S-142	b	b	b	b	b	b	b	b	b
S-142	b	b	b	b	b	b	b	b	b
S-142	b	b	b	b	b	b	b	b	b
S-201	b	b	b	b	b	b	b	b	b
S-201	b	b	b	b	b	b	b	b	b
S-201	b	b	b	b	b	b	b	b	b
S-207	b	b	b	b	b	b	b	b	b
S-207	b	b	b	b	b	b	b	b	b
S-207	b	b	b	b	b	b	b	b	b
S-209	b	b	b	b	b	b	b	b	b
S-209	b	b	b	b	b	b	b	b	b
S-209	b	b	b	b	b	b	b	b	b
S-038	b	b	b	b	b	b	b	b	b
S-038	b	b	b	b	b	b	b	b	b
S-038	b	b	b	b	b	b	b	b	b

a These data have not been corrected for temperature.

b Incomplete laboratory analysis. Results will be reported when available.

N/A = Not Applicable

Table 1-8 Uranium-238 Concentrations in Ambient Air for Onsite Samplers^a

Location	On Date	Off Date	Flow (m ³)	Fine Conc (pCi/m ³)	Fine Error (pCi/m ³)	Coarse Conc (pCi/m ³)	Coarse Error (pCi/m ³)	Total Conc (pCi/m ³)	Total Error (pCi/m ³)
S-107	b	b	b	b	b	b	b	b	b
S-107	b	b	b	b	b	b	b	b	b
S-107	b	b	b	b	b	b	b	b	b
S-007	b	b	b	b	b	b	b	b	b
S-007	b	b	b	b	b	b	b	b	b
S-007	b	b	b	b	b	b	b	b	b

a These data have not been corrected for temperature.

b Incomplete laboratory analysis. Results will be reported when available.

N/A = Not Applicable

Table 1-9 Uranium-238 Concentrations in Ambient Air for Perimeter Samplers^a

Location	On Date	Off Date	Flow (m ³)	Fine Conc (pCi/m ³)	Fine Error (pCi/m ³)	Coarse Conc (pCi/m ³)	Coarse Error (pCi/m ³)	Total Conc (pCi/m ³)	Total Error (pCi/m ³)
S-131	b	b	b	b	b	b	b	b	b
S-131	b	b	b	b	b	b	b	b	b
S-131	b	b	b	b	b	b	b	b	b
S-132	b	b	b	b	b	b	b	b	b
S-132	b	b	b	b	b	b	b	b	b
S-132	b	b	b	b	b	b	b	b	b
S-134	b	b	b	b	b	b	b	b	b
S-134	b	b	b	b	b	b	b	b	b
S-134	b	b	b	b	b	b	b	b	b
S-136	b	b	b	b	b	b	b	b	b
S-136	b	b	b	b	b	b	b	b	b
S-136	b	b	b	b	b	b	b	b	b
S-137	b	b	b	b	b	b	b	b	b
S-137	b	b	b	b	b	b	b	b	b
S-137	b	b	b	b	b	b	b	b	b
S-138	b	b	b	b	b	b	b	b	b
S-138	b	b	b	b	b	b	b	b	b
S-138	b	b	b	b	b	b	b	b	b
S-140	b	b	b	b	b	b	b	b	b
S-140	b	b	b	b	b	b	b	b	b
S-140	b	b	b	b	b	b	b	b	b

Table 1-9 Uranium-238 Concentrations in Ambient Air for Perimeter Samplers^a
(continued)

Location	On Date	Off Date	Flow (m³)	Fine Conc (pCi/m³)	Fine Error (pCi/m³)	Coarse Conc (pCi/m³)	Coarse Error (pCi/m³)	Total Conc (pCi/m³)	Total Error (pCi/m³)
S-141	b	b	b	b	b	b	b	b	b
S-141	b	b	b	b	b	b	b	b	b
S-141	b	b	b	b	b	b	b	b	b
S-142	b	b	b	b	b	b	b	b	b
S-142	b	b	b	b	b	b	b	b	b
S-142	b	b	b	b	b	b	b	b	b
S-201	b	b	b	b	b	b	b	b	b
S-201	b	b	b	b	b	b	b	b	b
S-201	b	b	b	b	b	b	b	b	b
S-207	b	b	b	b	b	b	b	b	b
S-207	b	b	b	b	b	b	b	b	b
S-207	b	b	b	b	b	b	b	b	b
S-209	b	b	b	b	b	b	b	b	b
S-209	b	b	b	b	b	b	b	b	b
S-209	b	b	b	b	b	b	b	b	b
S-038	b	b	b	b	b	b	b	b	b
S-038	b	b	b	b	b	b	b	b	b
S-038	b	b	b	b	b	b	b	b	b

a These data have not been corrected for temperature.

b Incomplete laboratory analysis. Results will be reported when available.

N/A = Not Applicable

Table 1-10 Americium-241 Concentrations in Ambient Air for Onsite Samplers^a

Location	On Date	Off Date	Flow (m³)	Fine Conc (pCi/m³)	Fine Error (pCi/m³)	Coarse Conc (pCi/m³)	Coarse Error (pCi/m³)	Total Conc (pCi/m³)	Total Error (pCi/m³)
S-107	b	b	b	b	b	b	b	b	b
S-107	b	b	b	b	b	b	b	b	b
S-107	b	b	b	b	b	b	b	b	b
S-007	b	b	b	b	b	b	b	b	b
S-007	b	b	b	b	b	b	b	b	b
S-007	b	b	b	b	b	b	b	b	b

a These data have not been corrected for temperature.

b Incomplete laboratory analysis. Results will be reported when available.

N/A = Not Applicable

Table 1-11 Americium-241 Concentrations in Ambient Air for Perimeter Samplers^a

Location	On Date	Off Date	Flow (m³)	Fine Conc (pCi/m³)	Fine Error (pCi/m³)	Coarse Conc (pCi/m³)	Coarse Error (pCi/m³)	Total Conc (pCi/m³)	Total Error (pCi/m³)
S-131	b	b	b	b	b	b	b	b	b
S-131	b	b	b	b	b	b	b	b	b
S-131	b	b	b	b	b	b	b	b	b
S-132	b	b	b	b	b	b	b	b	b
S-132	b	b	b	b	b	b	b	b	b
S-132	b	b	b	b	b	b	b	b	b
S-134	b	b	b	b	b	b	b	b	b
S-134	b	b	b	b	b	b	b	b	b
S-134	b	b	b	b	b	b	b	b	b
S-136	b	b	b	b	b	b	b	b	b
S-136	b	b	b	b	b	b	b	b	b
S-136	b	b	b	b	b	b	b	b	b
S-137	b	b	b	b	b	b	b	b	b
S-137	b	b	b	b	b	b	b	b	b
S-137	b	b	b	b	b	b	b	b	b
S-138	b	b	b	b	b	b	b	b	b
S-138	b	b	b	b	b	b	b	b	b
S-138	b	b	b	b	b	b	b	b	b
S-140	b	b	b	b	b	b	b	b	b
S-140	b	b	b	b	b	b	b	b	b
S-140	b	b	b	b	b	b	b	b	b

Table 1-11 Americium-241 Concentrations in Ambient Air for Perimeter Samplers^a
(continued)

Location	On Date	Off Date	Flow (m ³)	Fine Conc (pCi/m ³)	Fine Error (pCi/m ³)	Coarse Conc (pCi/m ³)	Coarse Error (pCi/m ³)	Total Conc (pCi/m ³)	Total Error (pCi/m ³)
S-141	b	b	b	b	b	b	b	b	b
S-141	b	b	b	b	b	b	b	b	b
S-141	b	b	b	b	b	b	b	b	b
S-142	b	b	b	b	b	b	b	b	b
S-142	b	b	b	b	b	b	b	b	b
S-142	b	b	b	b	b	b	b	b	b
S-201	b	b	b	b	b	b	b	b	b
S-201	b	b	b	b	b	b	b	b	b
S-201	b	b	b	b	b	b	b	b	b
S-207	b	b	b	b	b	b	b	b	b
S-207	b	b	b	b	b	b	b	b	b
S-207	b	b	b	b	b	b	b	b	b
S-209	b	b	b	b	b	b	b	b	b
S-209	b	b	b	b	b	b	b	b	b
S-209	b	b	b	b	b	b	b	b	b
S-038	b	b	b	b	b	b	b	b	b
S-038	b	b	b	b	b	b	b	b	b
S-038	b	b	b	b	b	b	b	b	b

a These data have not been corrected for temperature.

b Incomplete laboratory analysis. Results will be reported when available.

N/A = Not Applicable

Section 2: Meteorology and Climatology

Table 2-1 Climatic Summary for July 1997

Date	Temperature (°F)			Dew-Point (°F)	Rel. Hum. (%)	Wind Speed (mph)		Press (mb)	Solar (kW-h/m²)	Water-Equiv Precip (in.)	Peak Total (15 min)
	High	Low	Mean	Mean	Mean	Mean	Peak Gust (1 sec)	Mean	Total		
07/01	81.32	59.56	72.86	18.69	14.96	14.13	38.93	811.97	9.22	0	0
07/02	73.27	50.74	63.71	35.03	36.82	8.13	32.5	814.63	8.79	0	0
07/03	69.58	44.56	58.73	41.39	53.01	8.87	35.46	818.55	8	0	0
07/04	77.56	45.46	63.51	41.34	49.22	6.78	18.61	818	8.53	0	0
07/05	73.92	53.85	64.69	41.01	45.62	7.99	24.93	817.59	7.27	0.02	0.01
07/06	82.15	53.11	69.43	41.33	41.35	7.76	25.78	814.29	6.71	0	0
07/07	85.39	57.52	73.92	35.68	27.22	8.38	43.25	814.94	7.17	0	0
07/08	83.62	56.26	72.53	37.48	32.5	7.79	39.98	816.87	4.89	0	0
07/09	87.71	58.14	73.75	35.18	27.98	7.75	22.94	815.45	7.7	0	0
07/10	84.72	63.81	76.07	37.19	26.14	8.1	27.55	812.49	6.76	0	0
07/11	79.29	61.11	70.54	44.38	43.84	6.85	25.24	812.64	3.03	0	0
07/12	85.89	56.95	71.78	41.57	39.49	7.31	30.71	813.22	6.22	0.01	0.01
07/13	81.57	57.25	71.13	34.34	28.08	11.24	47.35	817.37	8.8	0	0
07/14	85.44	56.52	73.22	34.71	28.47	7.52	25.04	819.3	8.66	0	0
07/15	92.79	62.91	80.05	28.04	17.94	8.69	25.04	819.35	8.06	0	0
07/16	93.38	68.18	81.82	30.3	17.03	9.81	39.04	817.5	6.51	0	0
07/17	91.27	66.54	81.1	34.4	20.54	9.67	47.87	815.36	6.6	0	0
07/18	87.57	64.6	76.64	38.12	27.11	10.64	35.03	814.81	6.03	0	0
07/19	79.2	55.15	66.78	51.08	62.06	8.84	38.62	817.31	4.95	0.09	0.03
07/20	77.52	50.81	65.97	53.53	69.3	6.06	16.82	818.17	5.6	0.01	0.01
07/21	86.88	60.26	74.42	44.6	41.13	6.59	26.41	818.01	7.67	0	0
07/22	88.43	56.08	75.45	45.7	43.05	6.48	22.31	817.77	7.62	0	0
07/23	89.58	58.55	74.67	47.44	45.49	6.93	28.94	816.82	6.5	0.11	0.06
07/24	89.44	62.85	75.61	51.61	49.09	6.57	21.77	817.36	7.27	0.04	0.03
07/25	82.44	58.57	73.07	49.9	49.96	7.44	29.14	817.49	4.02	0	0
07/26	86.4	60.22	74.33	46.79	43.6	7.03	24.08	816.56	6.24	0	0
07/27	79.39	55.4	67.77	53.18	64.13	7.82	29.57	818.26	4.08	0.1	0.03
07/28	68.83	53.4	62.21	59.86	91.73	4.9	16.82	820.44	2.58	0.16	0.12
07/29	74.26	55.36	64.51	59.62	84.96	5.21	15.14	819.64	3.55	0.01	0.01
07/30	76.05	54.48	64.9	59.69	85.61	6.61	35.35	819.7	5.41	0.68	0.41
07/31	76.64	55.98	66.72	58.79	80.32	5.55	19.67	820.68	4.2	0.07	0.02

Temperature (°F)			Humidity		Wind Speed		Press	Solar	Precipitation	
Mean High	Mean Low	Mean	Dew Point	Rel. Hum.	Mean (mph)	Monthly Max	Monthly Avg	Monthly Total	Total	Monthly Max
82.3	57.2	71.0	43.0	44.8	7.9	47.9	816.9	198.6	1.3	0.4

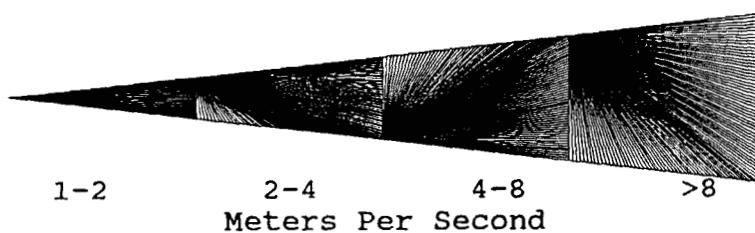
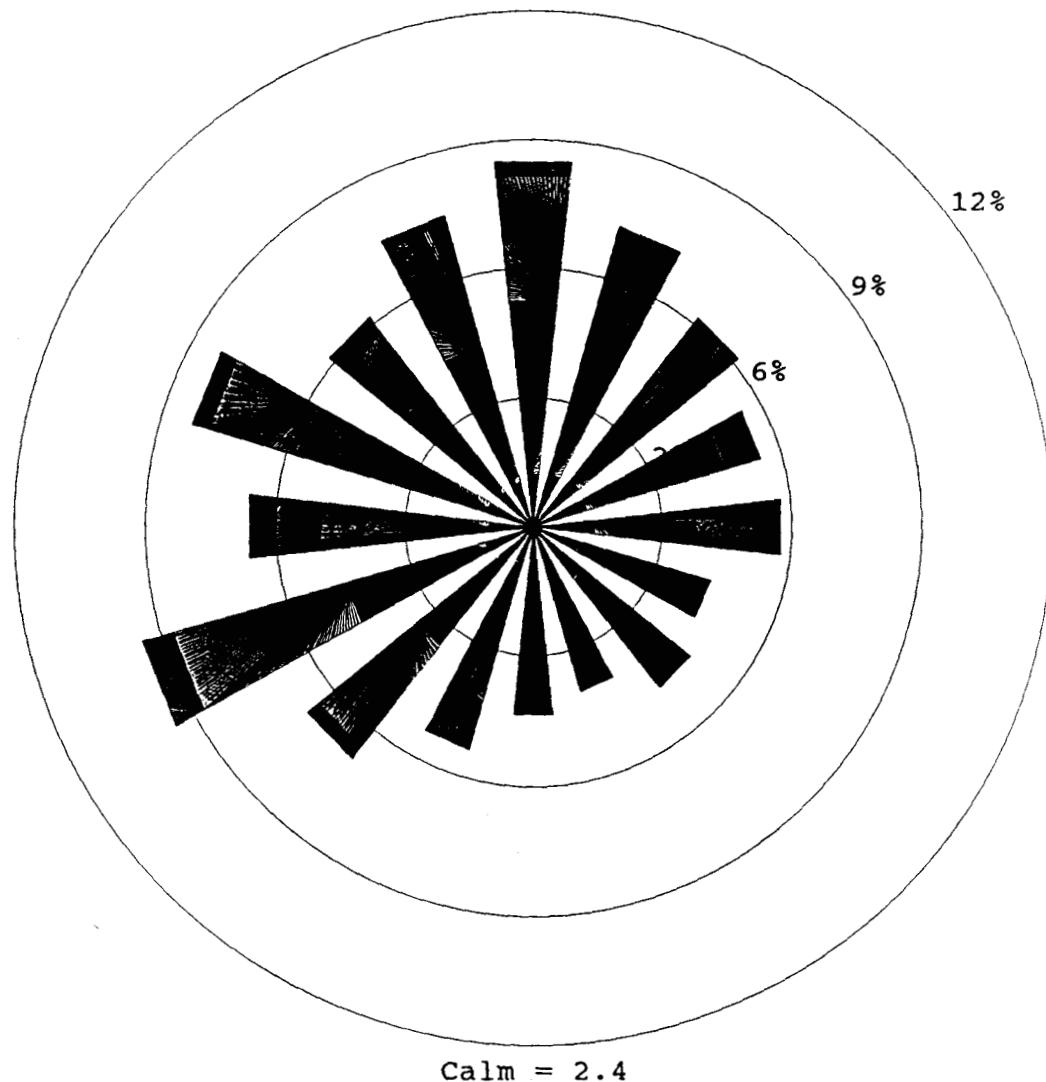


Figure 2-1 Windrose for the Rocky Flats Environmental Technology Site (July 1997)

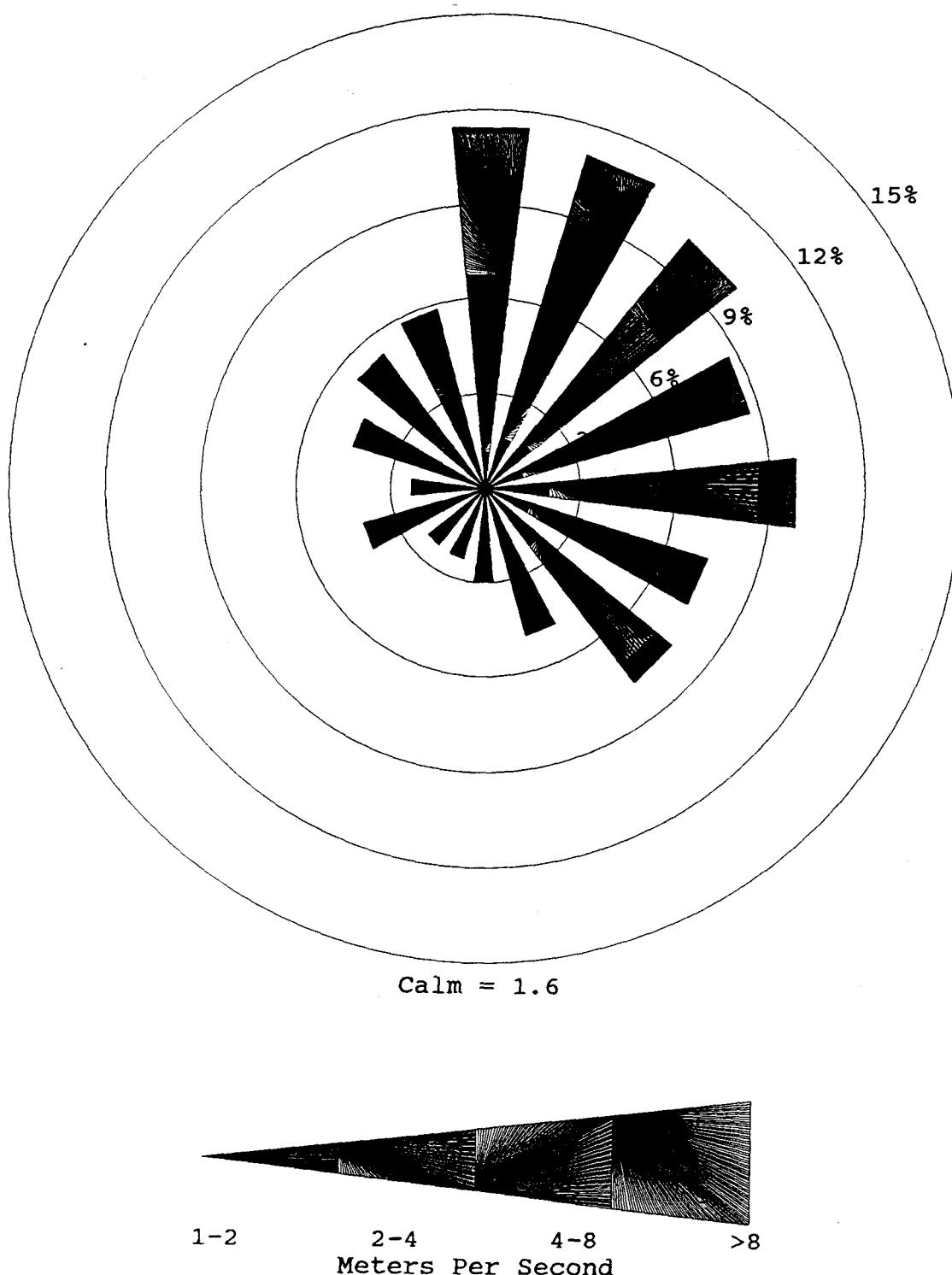


Figure 2-2 Day Windrose for the Rocky Flats Environmental Technology Site (July 1997)

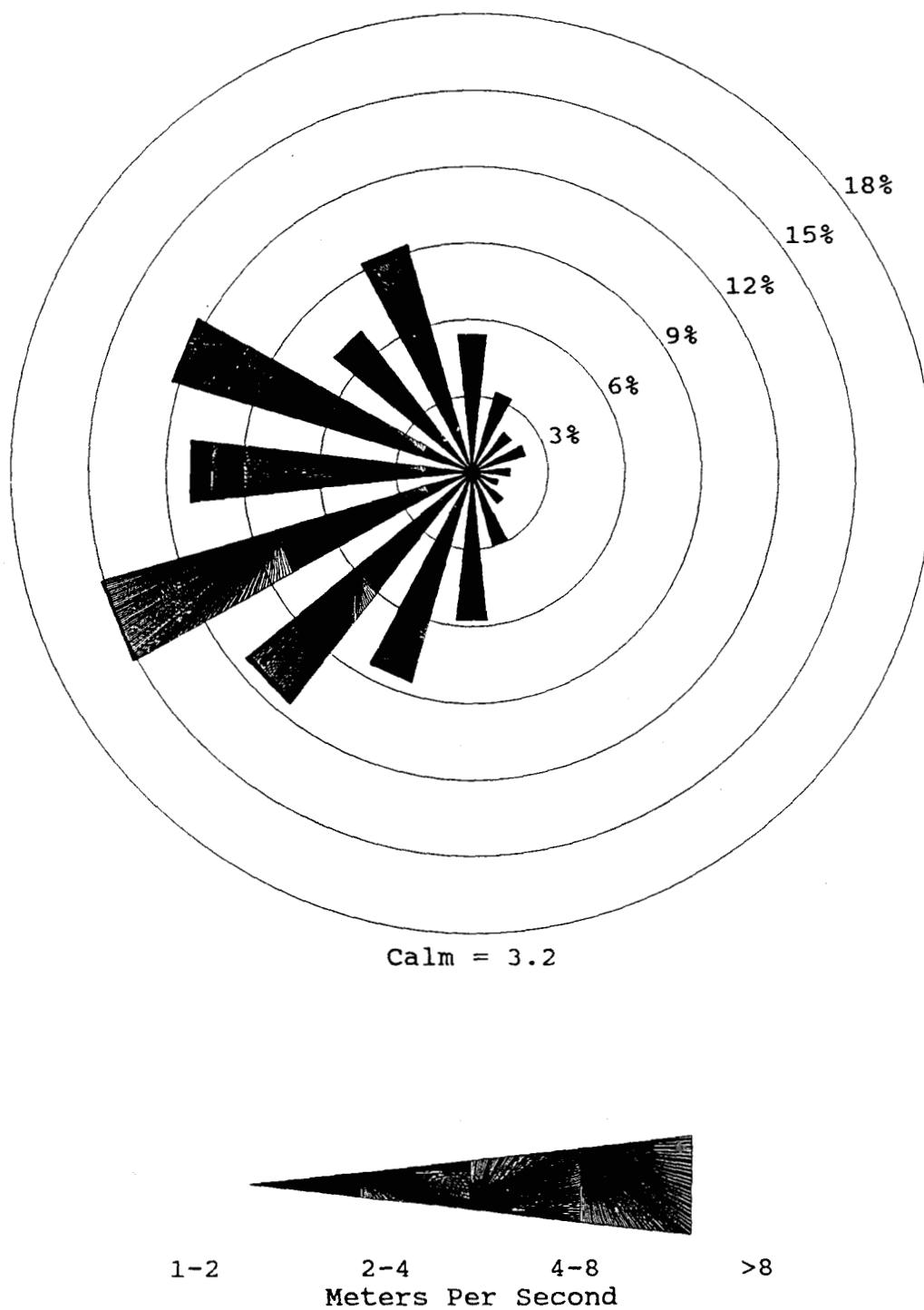


Figure 2-3 Night Windrose for the Rocky Flats Environmental Technology Site (July 1997)

Table 2-2 Climatic Summary for August 1997

Date	Temperature (°F)			Dew-Point (°F)	Rel. Hum. (%)	Wind Speed (mph)		Press (mb)	Solar (kW·h/m²)	Water-Equiv Precip (in.)	Peak Total (15 min)
	High	Low	Mean	Mean	Mean	Mean	Peak Gust (1 sec)	Mean	Total		
08/01	a	a	a	a	a	a	a	a	a	a	a
08/02	a	a	a	a	a	a	a	a	a	a	a
08/03	a	a	a	a	a	a	a	a	a	a	a
08/04	a	a	a	a	a	a	a	a	a	a	a
08/05	a	a	a	a	a	a	a	a	a	a	a
08/06	a	a	a	a	a	a	a	a	a	a	a
08/07	a	a	a	a	a	a	a	a	a	a	a
08/08	a	a	a	a	a	a	a	a	a	a	a
08/09	a	a	a	a	a	a	a	a	a	a	a
08/10	a	a	a	a	a	a	a	a	a	a	a
08/11	a	a	a	a	a	a	a	a	a	a	a
08/12	a	a	a	a	a	a	a	a	a	a	a
08/13	a	a	a	a	a	a	a	a	a	a	a
08/14	a	a	a	a	a	a	a	a	a	a	a
08/15	a	a	a	a	a	a	a	a	a	a	a
08/16	a	a	a	a	a	a	a	a	a	a	a
08/17	a	a	a	a	a	a	a	a	a	a	a
08/18	a	a	a	a	a	a	a	a	a	a	a
08/19	a	a	a	a	a	a	a	a	a	a	a
08/20	a	a	a	a	a	a	a	a	a	a	a
08/21	a	a	a	a	a	a	a	a	a	a	a
08/22	a	a	a	a	a	a	a	a	a	a	a
08/23	a	a	a	a	a	a	a	a	a	a	a
08/24	a	a	a	a	a	a	a	a	a	a	a
08/25	a	a	a	a	a	a	a	a	a	a	a
08/26	a	a	a	a	a	a	a	a	a	a	a
08/27	a	a	a	a	a	a	a	a	a	a	a
08/28	a	a	a	a	a	a	a	a	a	a	a
08/29	a	a	a	a	a	a	a	a	a	a	a
08/30	a	a	a	a	a	a	a	a	a	a	a
08/31	a	a	a	a	a	a	a	a	a	a	a

Temperature (°F)			Humidity		Wind Speed		Press	Solar	Precipitation	
Mean High	Mean Low	Mean	Dew Point	Rel. Hum.	Mean (mph)	Monthly Max	Monthly Avg	Monthly Total	Total	Monthly Max
a	a	a	a	a	a	a	a	a	a	a

a Data not available.

Day Wind Rose for the Rocky Flats Environmental Technology Site

August 1997

Data not available.

***Figure 2-5 Day Windrose for the Rocky Flats Environmental Technology Site
(August 1997)***

Night Wind Rose for the Rocky Flats Environmental Technology Site

August 1997

Data not available.

***Figure 2-6 Night Windrose for the Rocky Flats Environmental Technology Site
(August 1997)***

Table 2-3 Climatic Summary for September 1997

Date	Temperature (°F)			Dew-Point (°F)	Rel. Hum. (%)	Wind Speed (mph)		Press (mb)	Solar (kW·h/m²)	Water-Equiv Precip (in.)
	High	Low	Mean	Mean	Mean	Mean	Peak Gust (1 sec)	Mean	Total	Peak Total (15 min)
09/01	75.18	53.46	67.6	53.5	65.01	6.02	19.67	819.21	3.44	0.09 0
09/02	66.25	51.96	58.8	57.59	96.51	3.89	9.98	823.44	0.96	0 0
09/03	77.68	54.01	66.63	56.74	74.19	5.91	38.82	822.64	6.29	0.01 0
09/04	77.14	53.92	68.37	55.04	68.43	5.84	21.26	819.92	4.43	0.1 0
09/05	79.11	55.49	68.3	51.99	63.61	5.68	18.93	818.21	5.88	0 0
09/06	79.74	57.42	69.4	49.61	56.22	7.41	49.15	817.21	4.5	0.02 0
09/07	78.96	51.75	68.79	43.16	46.04	7.71	22.2	818.54	4.72	0 0
09/08	82.65	51.49	70.96	40.85	39.5	7.22	26.5	818.58	6.57	0 0
09/09	62.08	47.19	53.51	45.15	77.97	4.8	11.35	819.83	0.08	0 0
09/10	83.14	65.66	74.86	41.62	33.89	7.13	18.82	813.94	4.57	0 0
09/11	80.33	58.5	69.18	45.95	47.42	9.02	39.67	811.21	4.06	0.02 0
09/12	83.1	58.44	71.61	38.12	33.02	12	45.67	811.25	6.58	0 0
09/13	82.85	54.86	70.03	41.13	40.42	6.77	23.77	816.29	6.17	0.02 0
09/14	82.72	55.47	70.72	43.82	43.83	7.26	19.67	817.46	5.69	0 0
09/15	87.42	58.75	72.13	39.72	33.4	10.43	47.67	814.11	5.44	0 0
09/16	79.52	52.07	67.9	34.55	31.15	13.99	42.52	813.23	4.77	0 0
09/17	80.44	46.36	66.76	35.28	36.84	8.73	23.25	813.75	4.79	0 0
09/18	80.28	55.71	68.62	44.94	46.9	8.67	29.25	810.78	3.37	0 0
09/19	64.9	40.82	50.34	46.47	87.84	6.88	23.03	816.67	0.78	0.24 0
09/20	55.51	36.64	46.45	45.35	96.75	8.19	22.62	818.97	1.54	0 0
09/21	56.75	35.15	46.48	45.78	99.15	5.27	14.83	815.27	0.87	0.03 0
09/22	64.58	32.41	48.78	47.53	97.84	5.29	14.3	815.01	1.25	0.71 0
09/23	61.14	28.8	46.08	45.2	98.75	4.94	14.72	818.79	1.19	0.25 0
09/24	77	35.51	53.93	43.33	75.17	5.35	16.93	818.14	5.9	0 0
09/25	78.48	33.3	63.67	41.83	56.42	6.67	14.09	816.7	5.06	0 0
09/26	89.35	48.29	67.74	47.3	54.09	6.61	34.52	813.38	3.34	0 0
09/27	79.59	41.32	63.81	41.18	52.46	12.62	43.97	812.31	5.91	0 0
09/28	71.04	39.22	57.35	38.35	58.84	6.12	21.26	815.65	5.8	0 0
09/29	81.68	45.97	64.82	33.97	41.72	5.47	20.72	815.18	5.68	0 0
09/30	83.91	47.68	66.05	36.17	42.66	5.78	13.98	817.29	5.57	0 0

Temperature (°F)			Humidity		Wind Speed		Press	Solar	Precipitation	
Mean High	Mean Low	Mean	Dew Point	Rel. Hum.	Mean (mph)	Monthly Max	Monthly Avg	Monthly Total	Total	Monthly Max
76.08	48.25	63.32	44.37	59.87	7.26	49.15	816.43	125.20	1.49	0.00

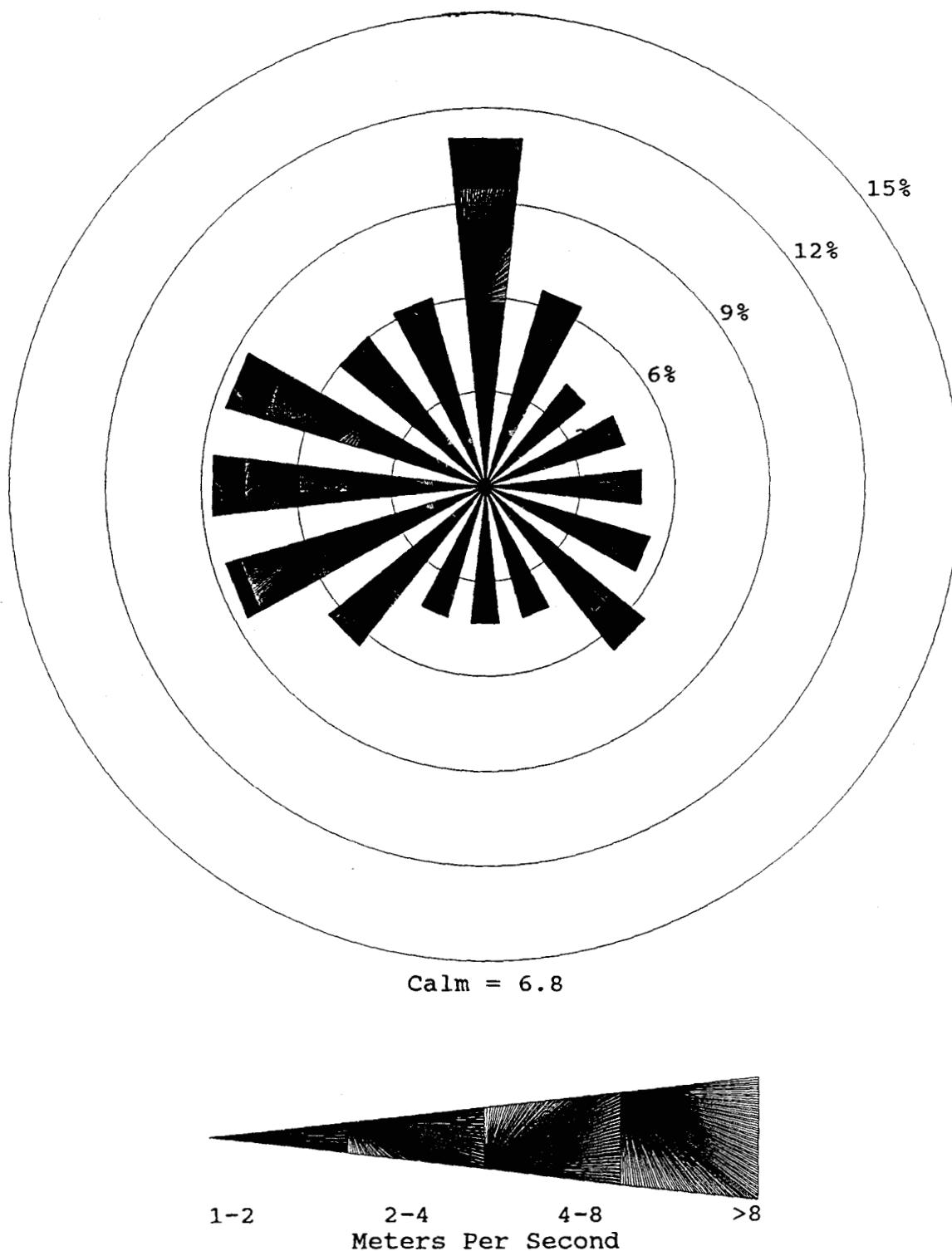
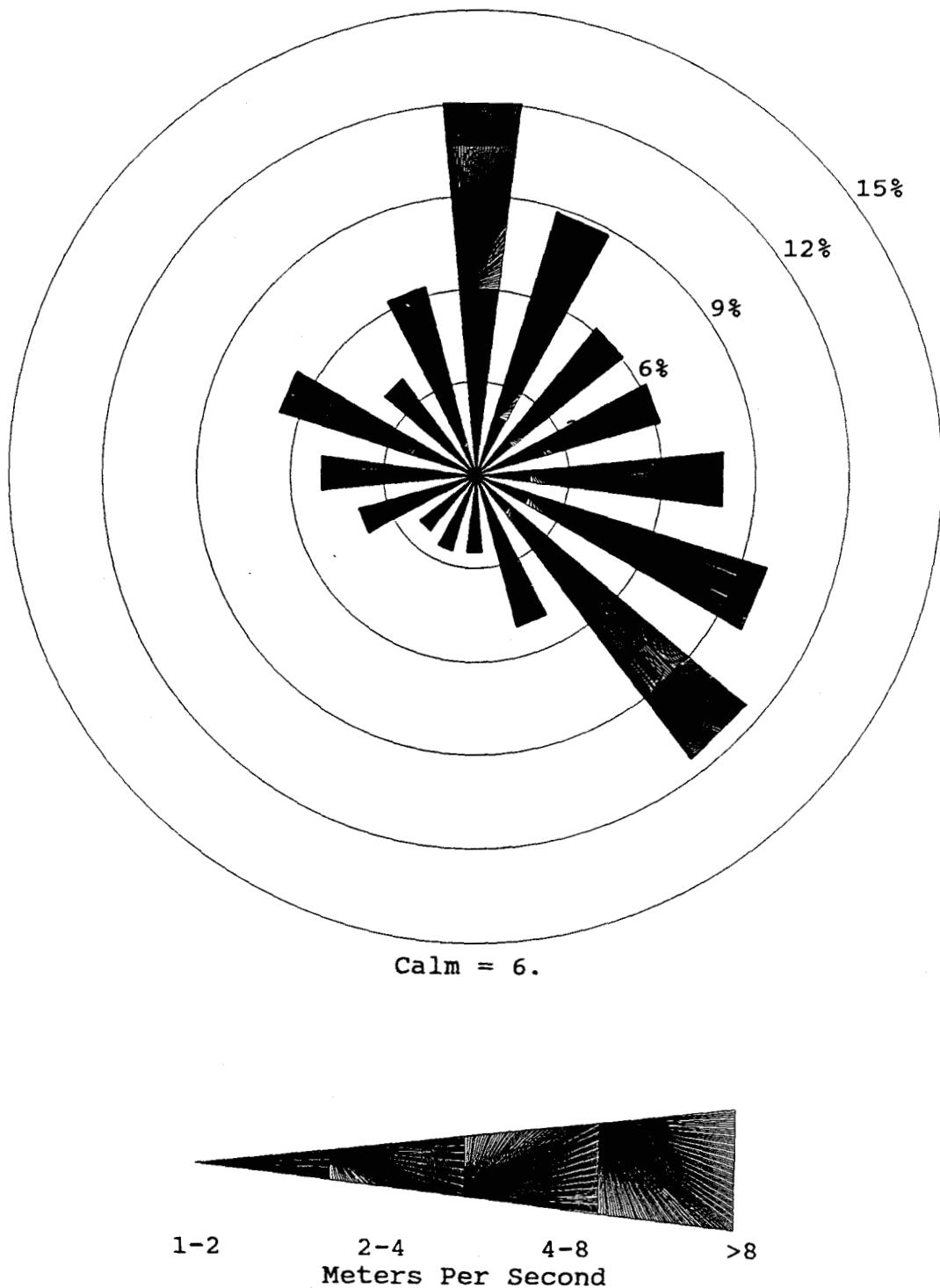
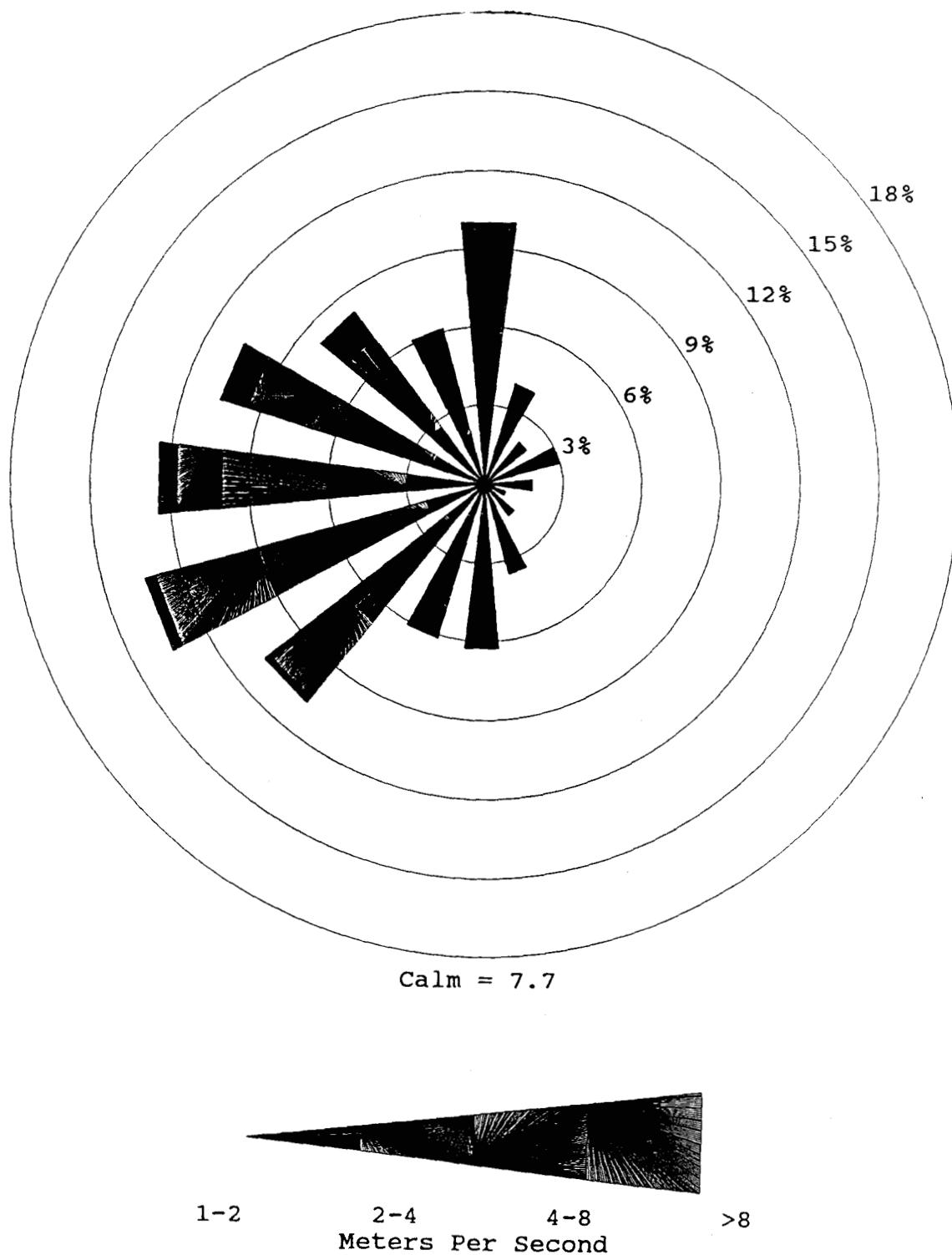


Figure 2-7 Windrose for the Rocky Flats Environmental Technology Site (September 1997)



*Figure 2-8 Day Windrose for the Rocky Flats Environmental Technology Site
(September 1997)*



*Figure 2-9 Night Windrose for the Rocky Flats Environmental Technology Site
(September 1997)*

Section 3: Surface Water Data

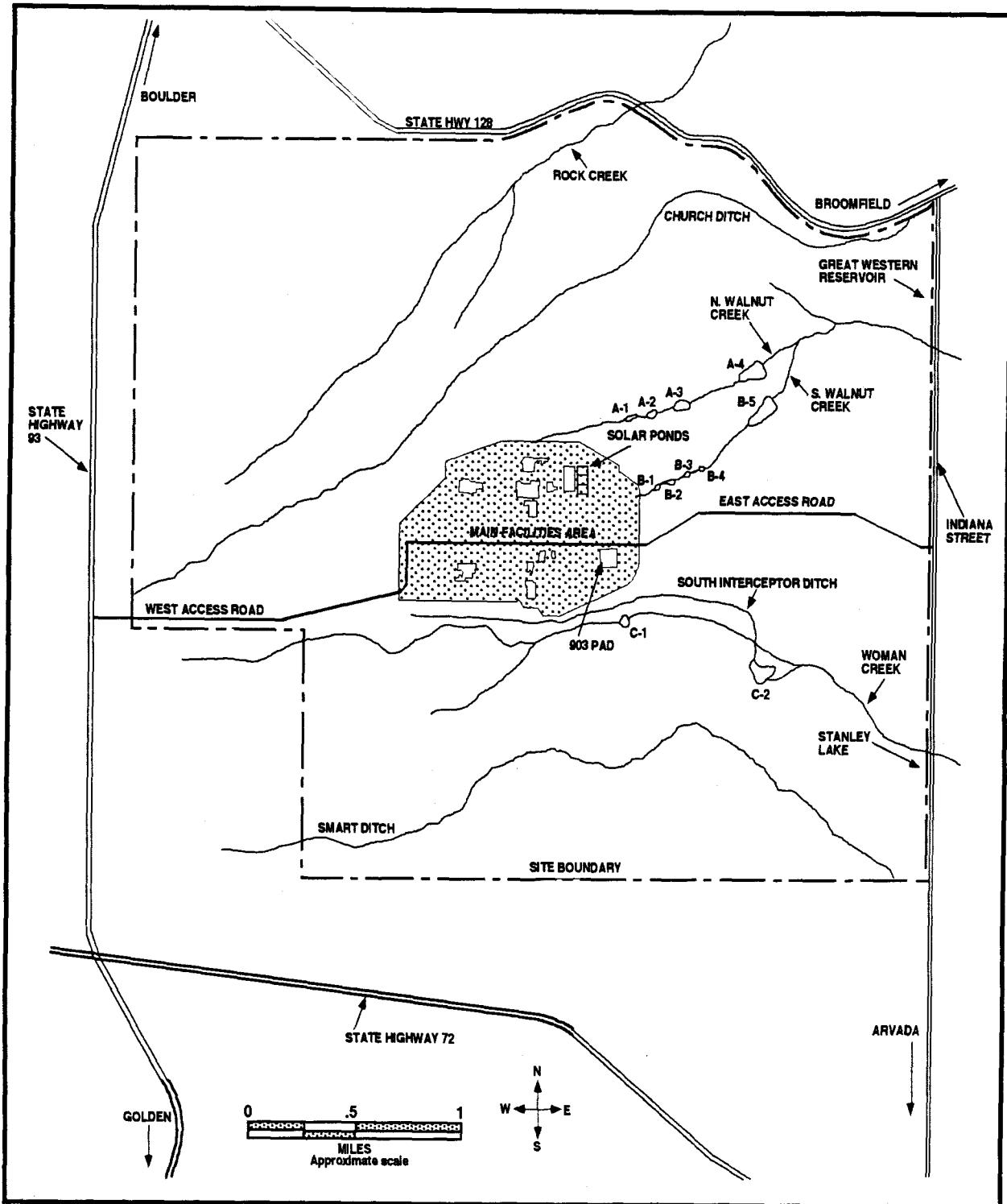


Figure 3-1 Holding Ponds and Liquid Effluent Water Courses

Table 3-1 Pond B-3 (Outfall 001A)

Dates of Discharge: 7/1/97 - 9/12/97, 9/15/97 - 9/19/97, 9/22/97 - 9/26/97, 9/29/97 - 9/30/97						
Parameter & Units	Measured 30-Day Average	Limit 30-Day Average	Measured 7-Day Average	Limit 7-Day Average	Measured Daily Maximum	Limit Daily Maximum
NO ₃ /NO ₂ mg/l	3.7 - 5.7	10	4.0 - 8.2	20	N/A	N/A
TRC mg/l	N/A	N/A	N/A	N/A	0.06 - 0.09	0.5
BOD ₅ mg/l	<3.5 - 4.8	a	N/A	N/A	6.0 - 9.0	a
CBOD ₅ mg/l	<2.8	a	N/A	N/A	2.0 - 6.0	a
TSS mg/l	<5	a	N/A	N/A	<5 - 18	a

a Report only.

N/A = Not Applicable
 TRC = Total Residual Chlorine
 TSS = Total Suspended Solids
 BOD₅ = Biochemical Oxygen Demand, 5-Day Test
 CBOD₅ = Carbonaceous Biochemical Oxygen Demand, 5-Day Test

Note: Results are the range of values measured during the reporting period.

Table 3-2 Sewage Treatment Plant (Outfall STPA)

Parameter and Units	Dates of Discharge: 7/1/97 - 9/30/97										
	Measured 30-Day Avg	Limit 30-Day Avg	Measured 7-Day Avg	Limit 7-Day Avg	Measured Daily Min	Limit Daily Min	Measured Daily Max	Limit Daily Max	Observed Sheen	Measured Result	
pH, SU	N/A	N/A	N/A	N/A	6.6 - 6.8	6.0	7.3 - 7.5	9.0	N/A	N/A	
TSS, mg/l	<5	30	<5 - 6	45	N/A	N/A	N/A	N/A	N/A	N/A	
Total Phosphorous, mg/l	1.0 - 2.1	8	N/A	N/A	N/A	N/A	2.0 - 7.2	12	N/A	N/A	
TRC, mg/l	<0.02	a	<0.02-0.03	a	N/A	N/A	N/A	N/A	N/A	N/A	
Total Chromium, $\mu\text{g/l}$	<0.9 - <1.9	50	N/A	N/A	N/A	N/A	<0.9 - 2.6	100	N/A	N/A	
Fecal Coliform #/100 ml	<7	200b	<7 - 1058	440b	N/A	N/A	N/A	N/A	N/A	N/A	
CBOD ₅ mg/l	<2	10	N/A	N/A	N/A	N/A	<2	25	N/A	N/A	
Oil & Grease	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	c	N/A	
WET Ceriodaphnia Fathead Minnows	N/A N/A	N/A N/A	N/A N/A	N/A N/A	N/A N/A	N/A N/A	N/A N/A	N/A N/A	N/A N/A	>100 89.5, fail	

Samples Collected: 7/1/97, 8/6/97, 9/2/97

Antimony, $\mu\text{g/l}$	<0.85	a	N/A							
Arsenic, $\mu\text{g/l}$	<0.65 - 1.2	a	N/A							
Beryllium, $\mu\text{g/l}$	<0.4	a	N/A							
Cadmium, $\mu\text{g/l}$	<0.1	a	N/A							
Copper, $\mu\text{g/l}$	1.2 - 2.2	a	N/A							
Iron, $\mu\text{g/l}$	40.7 - 67.2	a	N/A							
Lead, $\mu\text{g/l}$	<0.4	a	N/A							
Manganese, $\mu\text{g/l}$	18.0 - 34.5	a	N/A							
Mercury, $\mu\text{g/l}$	<0.1	a	N/A							
Nickel, $\mu\text{g/l}$	1.85 - 2.0	a	N/A							
Silver, $\mu\text{g/l}$	<0.08	a	N/A							
Zinc, $\mu\text{g/l}$	13.0 - 21.9	a	N/A							
VOCs, $\mu\text{g/l}$	d	a	N/A							

a Report Only

c No Sheen Observed

b Geometric

d None detected above PQL

N/A = Not Applicable

SU = Standard Units

TSS = Total Suspended Solids

TRC = Total Residual Chlorine

CBOD₅ = Carbonaceous Biochemical Oxygen Demand, 5-Day Test

PQL = Practical quantitation limit is equal to 10 times the method detection limit and represents the quantity at which 70% of laboratories can be reported in the 95% upper confidence limit.

WET = (Whole Effluent Toxicity) Results for WET are given in percentage of effluent sample that will cause mortality to half the test result organisms within the time frame of the test. For example, >100% indicates that 100% pure effluent did not cause acute toxicity to at least half of the organisms. A lower percentage LC₅₀ (lethal concentration to 50% of test organisms) indicates a greater toxic effect because less of the sample is required to observe a sufficiently extensive adverse effect.

Note: Results are the range of values measured during the reporting period.

Surface Water Data

Table 3-3 Ponds – Interior and Terminal

Location, Parameter, and Units	Measured 30-Day Avg	Limit 30-Day Avg	Measured 7-Day Avg	Limit 7-Day Avg	Measured Daily Min	Limit Daily Min	Measured Daily Max	Limit Daily Max	Measured Result
Discharged: 7/15/97 - 7/18/97, 8/7/97 - 8/13/97, 9/8/97 - 9/12/97									
Pond A-3 (Outfall 002) pH, SU	N/A	N/A	N/A	N/A	6.0	7.3 - 7.9	9.0	7.7 - 8.1	N/A
NO ₃ /NO ₂ , mg/l	<0.05 - 0.9	10	N/A	N/A	N/A	N/A	0.06 - 1.1	20	N/A

Discharged: 7/1/97 - 7/6/97, 8/5/97 - 8/7/97, 8/29/97 - 8/31/97, 9/1/97 - 9/8/97									
Pond A-4 (Outfall 005A) Total Chromium, mg/l	N/A	N/A	N/A	N/A	N/A	N/A	<1.4	50	N/A
WET Ceriodaphnia	N/A	N/A	>100						
Fathead Minnows	N/A	N/A	>100						

Discharged: 9/24/97 - 9/30/97									
Pond B-5 (Outfall 006A) Total Chromium, mg/l	N/A	N/A	N/A	N/A	N/A	N/A	<2.0	50	N/A
WET Ceriodaphnia	N/A	N/A	>100						
Fathead Minnows	N/A	N/A	>100						
NO ₃ /NO ₂ , mg/l*	N/A	N/A	N/A						
TRC, mg/l*	N/A	N/A	N/A						

No Discharge									
Pond C-2 (Outfall 007A) Total Chromium, mg/l	N/A	50	N/A						
WET Ceriodaphnia	N/A								
Fathead Minnows	N/A								

*Sample and analysis required only if Pond B-3 is bypassed.

N/A = Not Applicable

SU = Standard Units

TRC = Total Residual Chlorine

WET = (Whole Effluent Toxicity) Results for WET are given in percentage of effluent sample that will cause mortality to half the test result organisms within the time frame of the test. For example, >100% indicates that 100% pure effluent did not cause acute toxicity to at least half of the organisms. A lower percentage LC₅₀ (lethal concentration to 50% of test organisms) indicates a greater toxic effect because less of the sample is required to observe a sufficiently extensive adverse effect.

Note: Results are the range of values measured during the reporting period.

Table 3-4 Daily Transfer Flow Data Recorded for Pond B-5 to Pond A-4

Date	Pond B-5 to A-4 (gal)	Date	Pond B-5 to A-4 (gal)	Date	Pond B-5 to A-4 (gal)
7/1/97	No discharge	8/1/97	No discharge	9/1/97	No discharge
7/2/97	No discharge	8/2/97	No discharge	9/2/97	No discharge
7/3/97	No discharge	8/3/97	No discharge	9/3/97	No discharge
7/4/97	No discharge	8/4/97	No discharge	9/4/97	No discharge
7/5/97	No discharge	8/5/97	No discharge	9/5/97	No discharge
7/6/97	No discharge	8/6/97	No discharge	9/6/97	No discharge
7/7/97	679,000	8/7/97	422,000	9/7/97	No discharge
7/8/97	881,000	8/8/97	1,291,000	9/8/97	621,000
7/9/97	1,062,000	8/9/97	1,309,000	9/9/97	1,095,000
7/10/97	1,096,000	8/10/97	1,263,000	9/10/97	1,064,000
7/11/97	1,074,000	8/11/97	1,244,000	9/11/97	1,017,000
7/12/97	1,072,000	8/12/97	1,227,000	9/12/97	968,000
7/13/97	698,000	8/13/97	500	9/13/97	943,000
7/14/97	No discharge	8/14/97	No discharge	9/14/97	641,000
7/15/97	No discharge	8/15/97	No discharge	9/15/97	No discharge
7/16/97	No discharge	8/16/97	No discharge	9/16/97	No discharge
7/17/97	No discharge	8/17/97	No discharge	9/17/97	No discharge
7/18/97	No discharge	8/18/97	No discharge	9/18/97	No discharge
7/19/97	No discharge	8/19/97	No discharge	9/19/97	No discharge
7/20/97	No discharge	8/20/97	No discharge	9/20/97	No discharge
7/21/97	No discharge	8/21/97	No discharge	9/21/97	No discharge
7/22/97	No discharge	8/22/97	No discharge	9/22/97	No discharge
7/23/97	No discharge	8/23/97	No discharge	9/23/97	No discharge
7/24/97	No discharge	8/24/97	No discharge	9/24/97	No discharge
7/25/97	No discharge	8/25/97	No discharge	9/25/97	No discharge
7/26/97	No discharge	8/26/97	No discharge	9/26/97	No discharge
7/27/97	No discharge	8/27/97	No discharge	9/27/97	No discharge
7/28/97	No discharge	8/28/97	No discharge	9/28/97	No discharge
7/29/97	No discharge	8/29/97	No discharge	9/29/97	No discharge
7/30/97	No discharge	8/30/97	No discharge	9/30/97	No discharge
7/31/97	No discharge	8/31/97	No discharge		
Total	6,562,000	Total	6,756,500	Total	6,349,000

Section 4: Hydrologic - Rocky Flats Clean-up Agreement

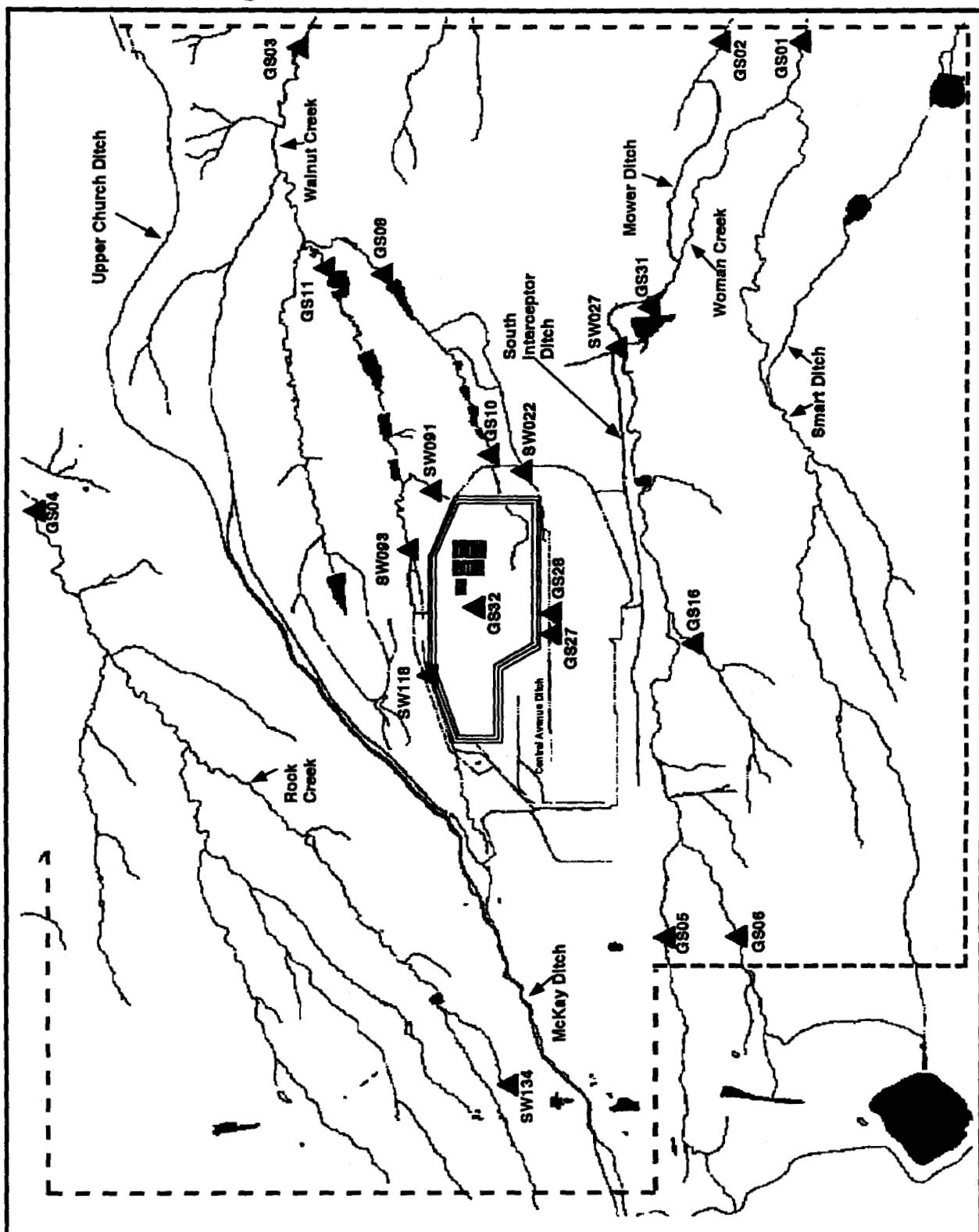


Figure 4-0 Gaging Station Locations

Key: Δ Gaging Station Location

Section 4.1 Flow Monitoring

Table 4-1 Gaging Station GS01: Mean Daily Discharge (Cubic Feet per Second)

Date	April 1997	May 1997	June 1997	July 1997	August 1997	September 1997
1	0.045	1.410	0.060	0.002	0.000	0.017
2	0.072	1.029	0.048	0.000	0.000	0.018
3	0.095	0.867	0.036	0.000	0.000	0.016
4	0.151	0.726	0.031	0.000	0.000	0.005
5	0.232	0.590	0.028	0.000	0.000	0.000
6	0.126	0.508	0.026	0.000	1.761	0.000
7	0.097	0.432	0.172	0.000	0.830	0.000
8	0.086	0.353	0.191	0.000	0.174	0.000
9	0.088	0.329	0.146	0.000	0.045	0.000
10	0.089	0.298	0.163	0.000	0.064	0.000
11	0.111	0.274	0.122	0.000	0.308	0.000
12	0.167	0.363	0.063	0.000	0.472	0.000
13	0.173	0.272	0.068	0.000	0.281	0.000
14	0.127	0.232	0.094	0.000	0.105	0.000
15	0.099	0.292	0.105	0.000	0.048	0.000
16	0.108	0.231	0.056	0.000	0.034	0.000
17	0.086	0.171	0.039	0.000	0.034	0.000
18	0.075	0.130	0.029	0.000	0.032	0.000
19	0.068	0.123	0.025	0.000	0.029	0.000
20	0.058	0.122	0.022	0.000	0.026	0.000
21	0.054	0.102	0.022	0.000	0.023	0.000
22	0.050	0.189	0.021	0.000	0.022	0.000
23	0.059	0.328	0.018	0.000	0.020	0.000
24	3.593	0.235	0.016	0.000	0.020	0.000
25	5.750	0.479	0.015	0.000	0.018	0.000
26	13.158a	0.274	0.014	0.000	0.018	0.000
27	25.311a	0.168	0.011	0.000	0.019	0.000
28	19.528a	0.131	0.007	0.000	0.019	0.000
29	5.426 ^a	0.133	0.006	0.000	0.019	0.000
30	2.006	0.129	0.004	0.000	0.017	0.000
31	N/A	0.092	N/A	0.000	0.017	0.000
Mo. Avg. (cfs)	2.570	0.355	0.055	0.000	0.144	0.002

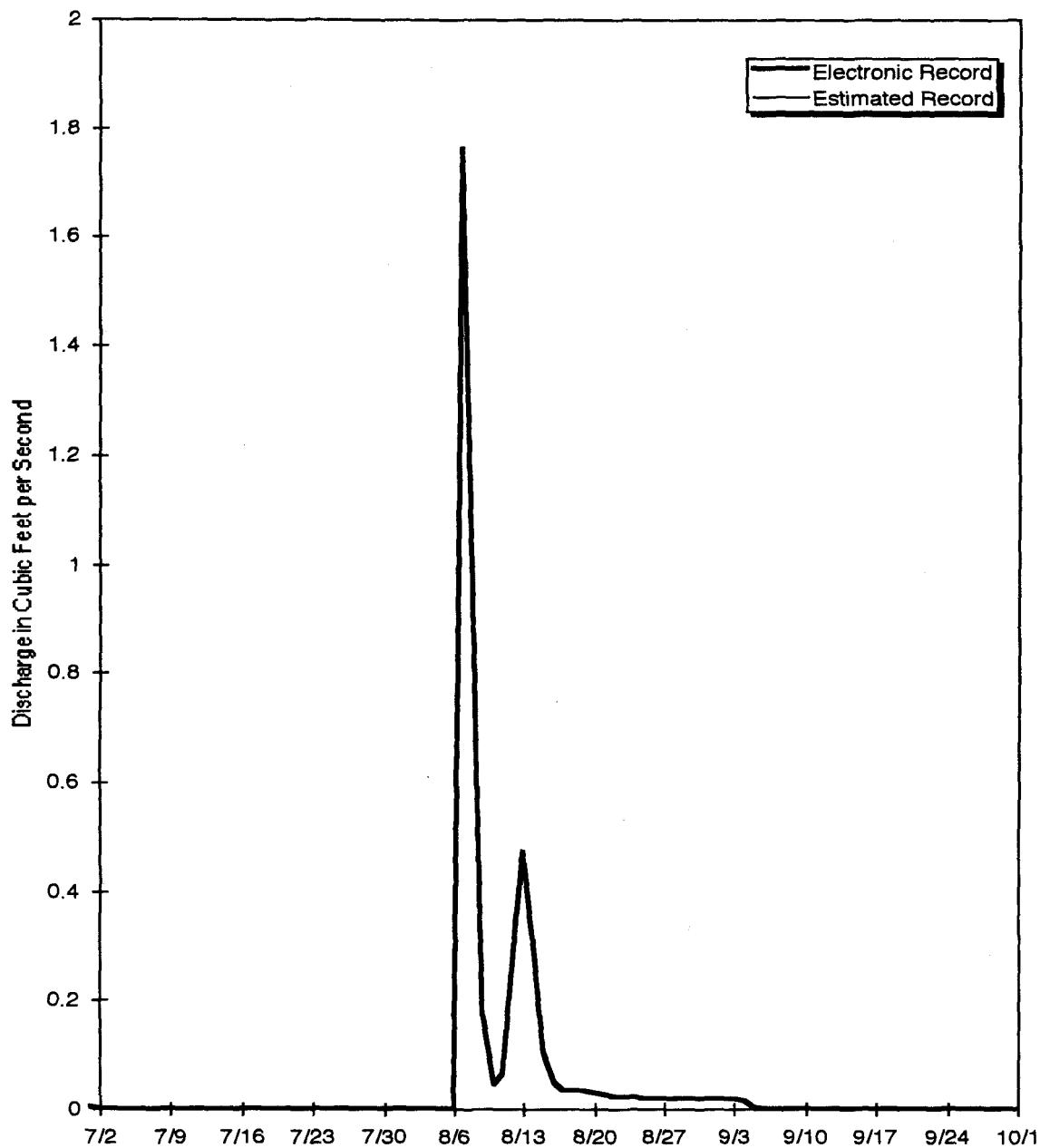
Monthly Discharge

Cubic Feet	6,660,431	951,258	143,088	159	384,826	4,780
Gallons	49,823,490	7,115,902	1,070,376	1,193	2,878,695	35,760
Acre-Feet	152.88	21.83	3.28	0.00	8.83	0.11

Note: Mean flow values are reported to the nearest 0.001 cfs, values less than 0.0005 cfs are reported as zero.

a Contains data estimated from field observations and electronic record at adjacent or comparable gages.

Gaging Station GS01 is located at $39^{\circ} 52' 40''$ N, $105^{\circ} 09' 55''$ W, at Woman Creek and Indiana Street (See Section 4 Map). This station is a RFCA Point of Compliance, a Buffer Zone Monitoring Location and a monitoring point for water leaving the Site and flowing to Woman Creek Reservoir. This station collects samples for selected radionuclides using continuous flow-paced sampling and storm event sampling for selected water quality parameters, metals, and major ions.



***Figure 4-1 Mean Daily Discharge at Gaging Station GS01, Water Year 1997
(July, August, September 1997)***

Table 4-2 Gaging Station GS02: Mean Daily Discharge (Cubic Feet per Second)

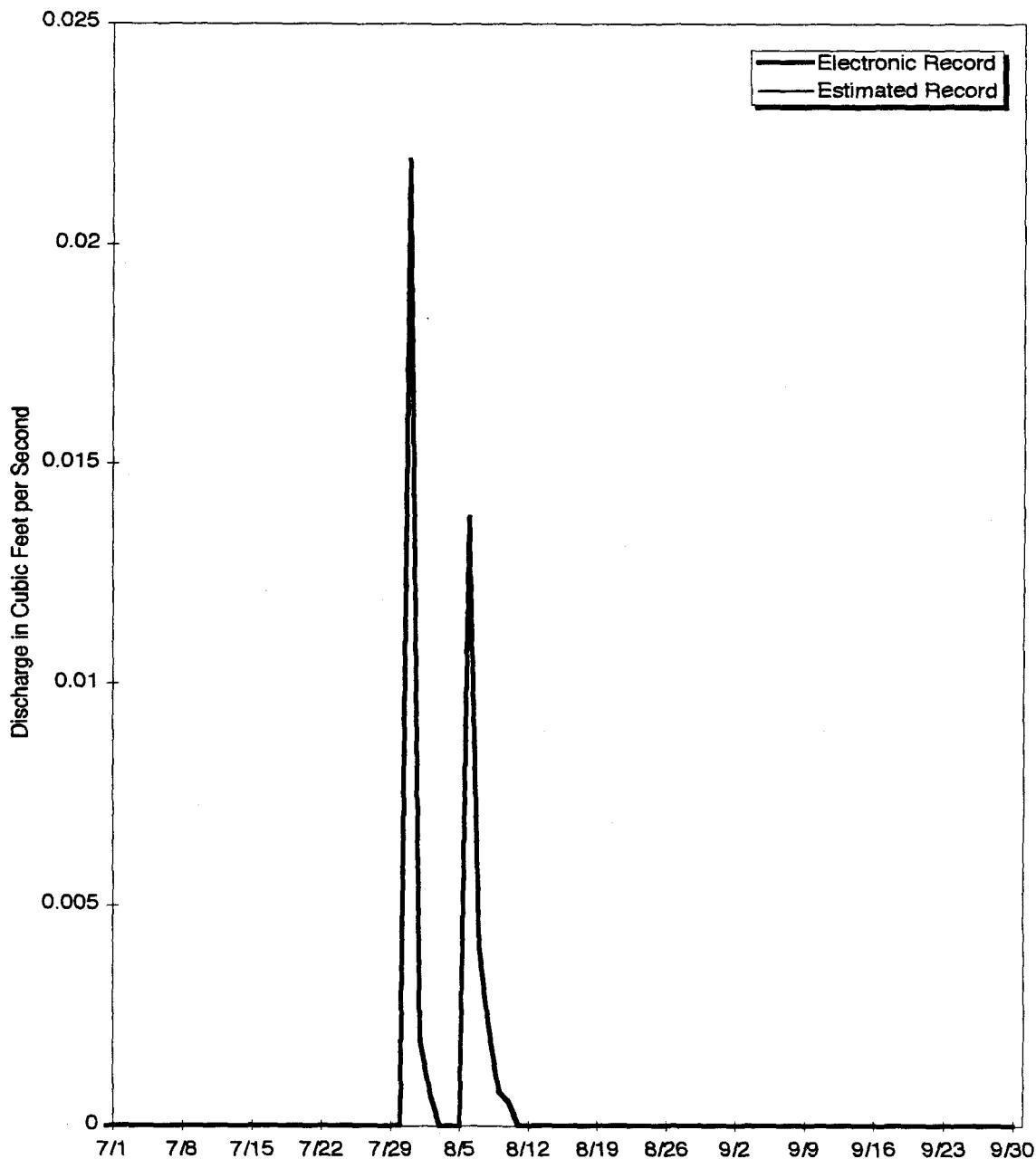
Date	April 1997	May 1997	June 1997	July 1997	August 1997	September 1997
1	0.004	0.016	0.000	0.000	0.002	0.000
2	0.032	0.013	0.000	0.000	0.001	0.000
3	0.157	0.010	0.000	0.000	0.000	0.000
4	0.349	0.007	0.000	0.000	0.000	0.000
5	0.974	0.004	0.000	0.000	0.000	0.000
6	0.702	0.003	0.000	0.000	0.014	0.000
7	0.315	0.002	0.000	0.000	0.004	0.000
8	0.205	0.001	0.000	0.000	0.002	0.000
9	0.191	0.000	0.000	0.000	0.001	0.000
10	0.176	0.000	0.000	0.000	0.001	0.000
11	0.250	0.000	0.000	0.000	0.000	0.000
12	0.470	0.000	0.000	0.000	0.000	0.000
13	0.710	0.000	0.000	0.000	0.000	0.000
14	0.899	0.000	0.000	0.000	0.000	0.000
15	0.470	0.000	0.000	0.000	0.000	0.000
16	0.368	0.000	0.000	0.000	0.000	0.000
17	0.273	0.000	0.000	0.000	0.000	0.000
18	0.194	0.000	0.000	0.000	0.000	0.000
19	0.154	0.000	0.000	0.000	0.000	0.000
20	0.107	0.000	0.000	0.000	0.000	0.000
21	0.069	0.000	0.000	0.000	0.000	0.000
22	0.040	0.000	0.000	0.000	0.000	0.000
23	0.012	0.000	0.000	0.000	0.000	0.000
24	0.042	0.000	0.000	0.000	0.000	0.000
25	0.078	0.000	0.000	0.000	0.000	0.000
26	0.122	0.000	0.000	0.000	0.000	0.000
27	0.303	0.000	0.000	0.000	0.000	0.000
28	0.078	0.000	0.000	0.000	0.000	0.000
29	0.025	0.000	0.000	0.000	0.000	0.000
30	0.019	0.000	0.000	0.000	0.000	0.000
31	NA	0.000	NA	0.022	0.000	NA
Mo. Avg. (cfs)	0.260	0.002	0.000	0.001	0.001	0.000

Monthly Discharge

Cubic Feet	672,682	4,896	0	1,894	2,079	0
Gallons	5,032,014	36,623	0	14,166	15,550	0
Acre-Feet	15.44	0.11	0.00	0.04	0.05	0.00

Note: Mean flow values are reported to the nearest 0.001 cfs, values less than 0.0005 cfs are reported as zero.

Gaging Station GS02 is located at $39^{\circ} 52' 53''\text{N}$ and $105^{\circ} 9' 55''\text{W}$, at Mower Ditch and Indiana Street (See Section 4 Map). This station is a Buffer Zone Monitoring Location and is a monitoring point for water leaving the Site and flowing to Mower Reservoir. Storm event samples are collected for selected water quality parameters, metals, and major ions.



***Figure 4-2 Mean Daily Discharge at Gaging Station GS02, Water Year 1997
(July, August, September 1997)***

Table 4-3 Gaging Station GS03: Mean Daily Discharge (Cubic Feet per Second)

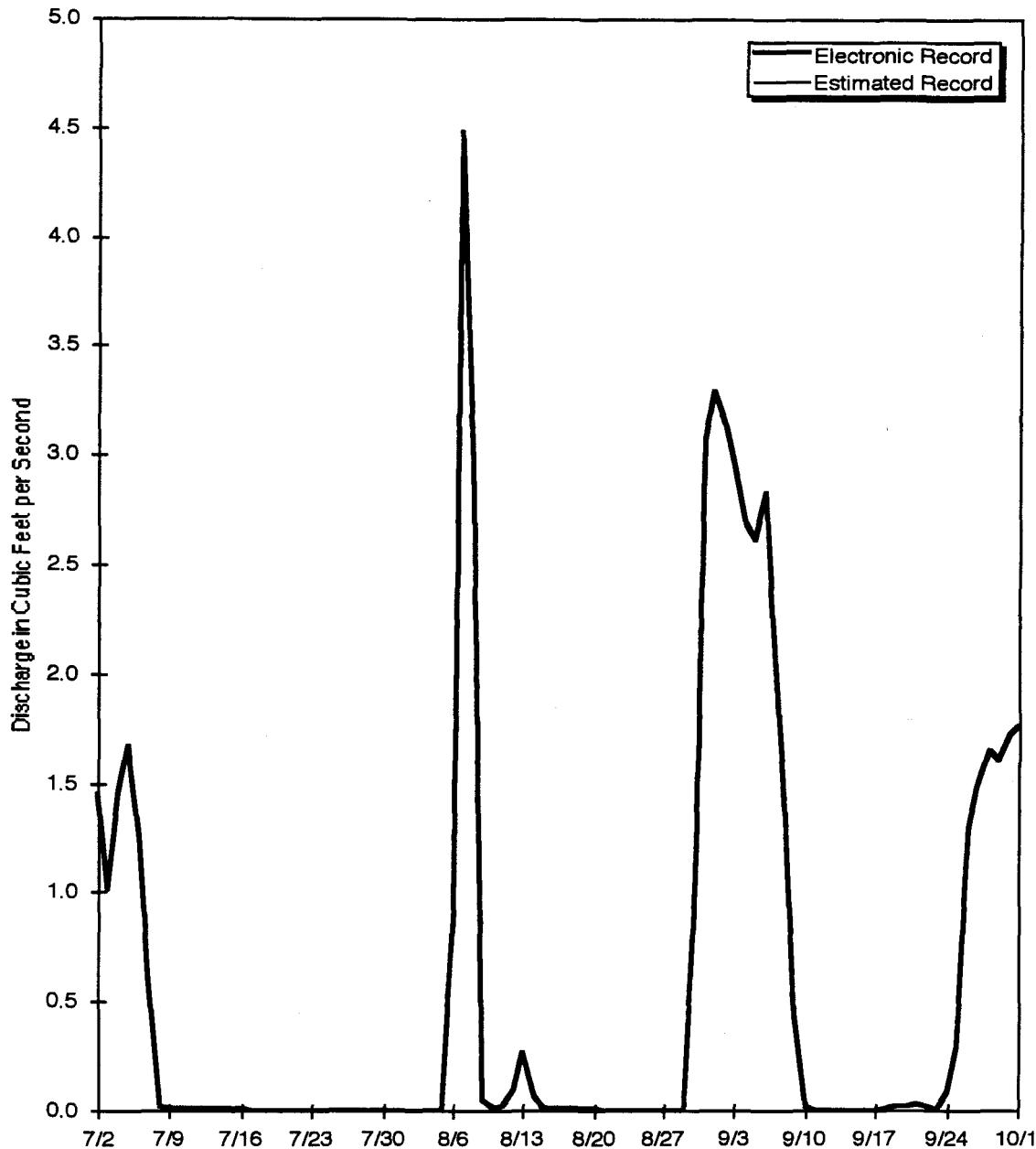
Date	April 1997	May 1997	June 1997	July 1997	August 1997	September 1997
1	0.001	3.362	0.002a	1.445	0.000	3.139
2	0.004	7.040	0.003a	1.009	0.000	2.967
3	0.915	6.667	0.003a	1.462	0.000	2.694
4	2.579	6.154	0.002a	1.670	0.000	2.627
5	2.851	5.646	0.000	1.253	0.923	2.830
6	2.580	5.135	0.001	0.616	4.482	2.109
7	2.304	4.262	0.033	0.022	2.964	1.349
8	2.145	4.018	0.030	0.012	0.050	0.439
9	1.541	3.645	0.020	0.011	0.014	0.015
10	1.517	3.196	0.033a	0.011	0.015	0.003
11	1.432	2.700	0.021a	0.013	0.098	0.002
12	1.281	2.687	0.007a	0.012	0.267	0.002
13	1.557	1.313	0.005	0.009	0.062	0.003
14	0.245	1.303	0.017	0.009	0.013	0.005
15	0.121	0.058	0.009	0.007	0.008	0.003
16	0.054	0.032	0.003	0.004	0.008	0.004
17	0.021	0.033	0.002	0.002	0.009	0.010
18	0.015	0.047	0.002	0.000	0.007	0.014
19	0.036	0.036	0.002a	0.000	0.005	0.018
20	0.080	0.016	0.001a	0.000	0.003	0.027
21	0.069	0.010	0.001a	0.000	0.001	0.020
22	0.095	0.021	0.001a	0.000	0.004	0.002
23	0.048	0.025	0.001a	0.000	0.004	0.082
24	1.830	0.027	0.001a	0.000	0.003	0.289
25	6.439	0.033	0.552a	0.000	0.002	1.301
26	9.877	0.011	2.430	0.000	0.001	1.501
27	14.969	0.002	2.363	0.000	0.000	1.653
28	7.768	0.002	2.244	0.000	0.000	1.610
29	4.736	0.001	2.088	0.000	1.068	1.725
30	2.813	0.001	1.937	0.000	3.068	1.774
31	NA	0.001	NA	0.000	3.300	N/A
Mo. Avg. (cfs)	2.331	1.854	0.394	0.244	0.528	0.941

Monthly Discharge						
Cubic Feet	6,041,504	4,966,622	1,020,628	653,772	1,414,874	2,438,005
Gallons	45,193,594	37,152,917	7,634,828	4,890,555	10,583,992	18,237,542
Acre-Feet	138.67	114.00	23.43	15.01	32.48	55.96

Note: Mean flow values are reported to the nearest 0.001 cfs, values less than 0.0005 cfs are reported as zero.

a Contains data estimated from field observations and electronic record at adjacent or comparable gages.

Gaging Station GS03 is located at 39° 54' 7"N, 105° 9' 59"W, at Walnut Creek and Indiana Street (See Section 4 Map). This station is a RFCA Point of Compliance, a Buffer Zone Monitoring Location and a monitoring point for water leaving the Site and flowing to the Broomfield Diversion Ditch. This station collects samples for selected radionuclides using continuous flow-paced sampling and storm event sampling for selected water quality parameters, metals, and major ions.



**Figure 4-3 Mean Daily Discharge at Gaging Station GS03, Water Year 1997
(July, August, September 1997)**

Table 4-4 Gaging Station GS04 Mean Daily Discharge (Cubic Feet per Second)

Date	April 1997	May 1997	June 1997	July 1997	August 1997	September 1997
1	0.168	2.122	0.176	0.000	0.000	0.000
2	0.232	1.521	0.175	0.000	0.000	0.000
3	0.355	3.318	0.154	0.000	0.000	0.000
4	0.464	1.717	0.141	0.000	0.381	0.000
5	0.879	0.988	0.129	0.000	0.559	0.000
6	0.557	0.796	0.143	0.000	2.423	0.000
7	0.377	0.647	0.531	0.000	0.579	0.000
8	0.318	0.566	0.302	0.000	0.237	0.000
9	0.307	0.517	0.318	0.000	0.132	0.000
10	0.315	0.464	0.277	0.000	0.324	0.000
11	0.356	0.467	0.216	0.000	0.373	0.000
12	0.484	0.528	0.163	0.000	0.310	0.000
13	0.748	0.414	0.162	0.000	0.221	0.000
14	0.805	0.397	0.532	0.000	0.132	0.000
15	0.550	0.420	0.261	0.000	0.066	0.000
16	0.519	0.339	0.186	0.000	0.037	0.000
17	0.417	0.287	0.147	0.000	0.037	0.000
18	0.364	0.250	0.123	0.000	0.047	0.000
19	0.325	0.267	0.095	0.000	0.059	0.000
20	0.290	0.253	0.071	0.000	0.045	0.000
21	0.269	0.233	0.045	0.000	0.031	0.000
22	0.258	0.464	0.027	0.000	0.026	0.000
23	0.291	0.443	0.016	0.000	0.021	0.304
24	2.823	0.506	0.007	0.000	0.018	0.264
25	4.652a	0.537	0.001	0.000	0.014	0.176
26	9.730a	0.377	0.000	0.000	0.011	0.140
27	14.629a	0.283	0.000	0.000	0.009	0.111
28	11.658a	0.267	0.000	0.000	0.006	0.079
29	5.047a	0.278	0.000	0.000	0.004	0.059
30	2.816	0.266	0.000	0.000	0.002	0.052
31	NA	0.221	NA	0.000	0.000	NA
Mo. Avg. (cfs)	2.033	0.650	0.147	0.000	0.197	0.039

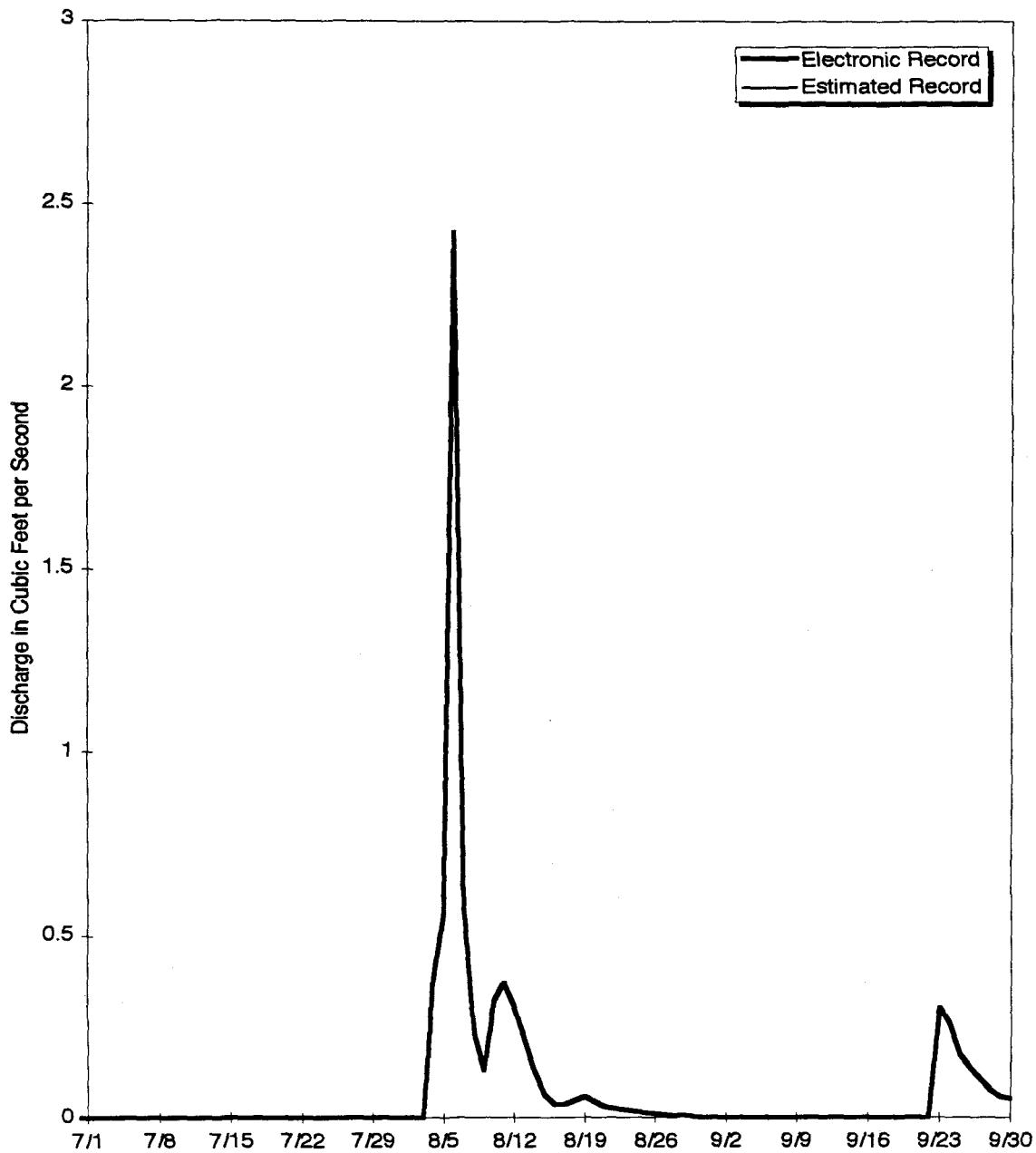
Monthly Discharge

Cubic Feet	5,270,562	1,741,209	379,994	0	527,155	102,322
Gallons	39,426,547	13,025,145	2,842,552	0	3,943,394	765,419
Acre-Feet	120.98	39.97	8.72	0.00	12.10	2.35

Note: Mean flow values are reported to the nearest 0.001 cfs, values less than 0.0005 cfs are reported as zero.

a Contains data estimated from field observations and electronic record at adjacent or comparable gages.

Gaging Station GS04 is located $39^{\circ} 54' 57''N$, $105^{\circ} 11' 37''W$, at Rock Creek and Highway 128 (See Section 4 Map). This station is a Buffer Zone Monitoring Location and is a monitoring point for water leaving the Site through the Rock Creek drainage flowing to Coal Creek. Storm event samples are collected for selected water quality parameters, metals, and major ions.



**Figure 4-4 Mean Daily Discharge at Gaging Station GS04, Water Year 1997
(July, August, September 1997)**

Table 4-5 Gaging Station GS05: Mean Daily Discharge (Cubic Feet per Second)

Date	April 1997	May 1997	June 1997	July 1997	August 1997	September 1997
1	0.035	0.346	0.048	0.015	0.022	0.058
2	0.065	0.252	0.045	0.014	0.022	0.073
3	0.100	0.228	0.038	0.016	0.023	0.065
4	0.156	0.191	0.040	0.017	0.038	0.063
5	0.318	0.168	0.039	0.018	0.146	0.062
6	0.136	0.138	0.119	0.019	0.938	0.055
7	0.080	0.087	0.241	0.022	0.139	0.048
8	0.065	0.100	0.070	0.036	0.057	0.044
9	0.063	0.123	0.091	0.042	0.044	0.027
10	0.075	0.102	0.121	0.034	0.104	0.028
11	0.124	0.104	0.038	0.037	0.096	0.025
12	0.235	0.101	0.028	0.033	0.080	0.025
13	0.349	0.087	0.035	0.017	0.064	0.019
14	0.195	0.110	0.115	0.017	0.045	0.016
15	0.125	0.103	0.035	0.016	0.040	0.013
16	0.124	0.083	0.029	0.022	0.056	0.010
17	0.083	0.072	0.028	0.055	0.067	0.010
18	0.083	0.074	0.021	0.070	0.058	0.010
19	0.070	0.070	0.019	0.052	0.046	0.017
20	0.049	0.066	0.016	0.048	0.043	0.034
21	0.046	0.072	0.020	0.035	0.049	0.024
22	0.072	0.109	0.016	0.028	0.047	0.109
23	0.162	0.085	0.014	0.027	0.046	0.246
24	1.545	0.205	0.012	0.022	0.048	0.061
25	3.700	0.118	0.011	0.019	0.045	0.040
26	6.198a	0.081	0.010	0.020	0.050	0.036
27	9.181a	0.070	0.009	0.022	0.054	0.035
28	5.568a	0.067	0.007	0.044	0.056	0.032
29	1.051	0.069	0.006	0.034	0.054	0.033
30	0.480	0.059	0.016	0.066	0.057	0.031
31	NA	0.050	NA	0.022	0.054	NA
Mo. Avg. (cfs)	1.018	0.116	0.045	0.030	0.087	0.045

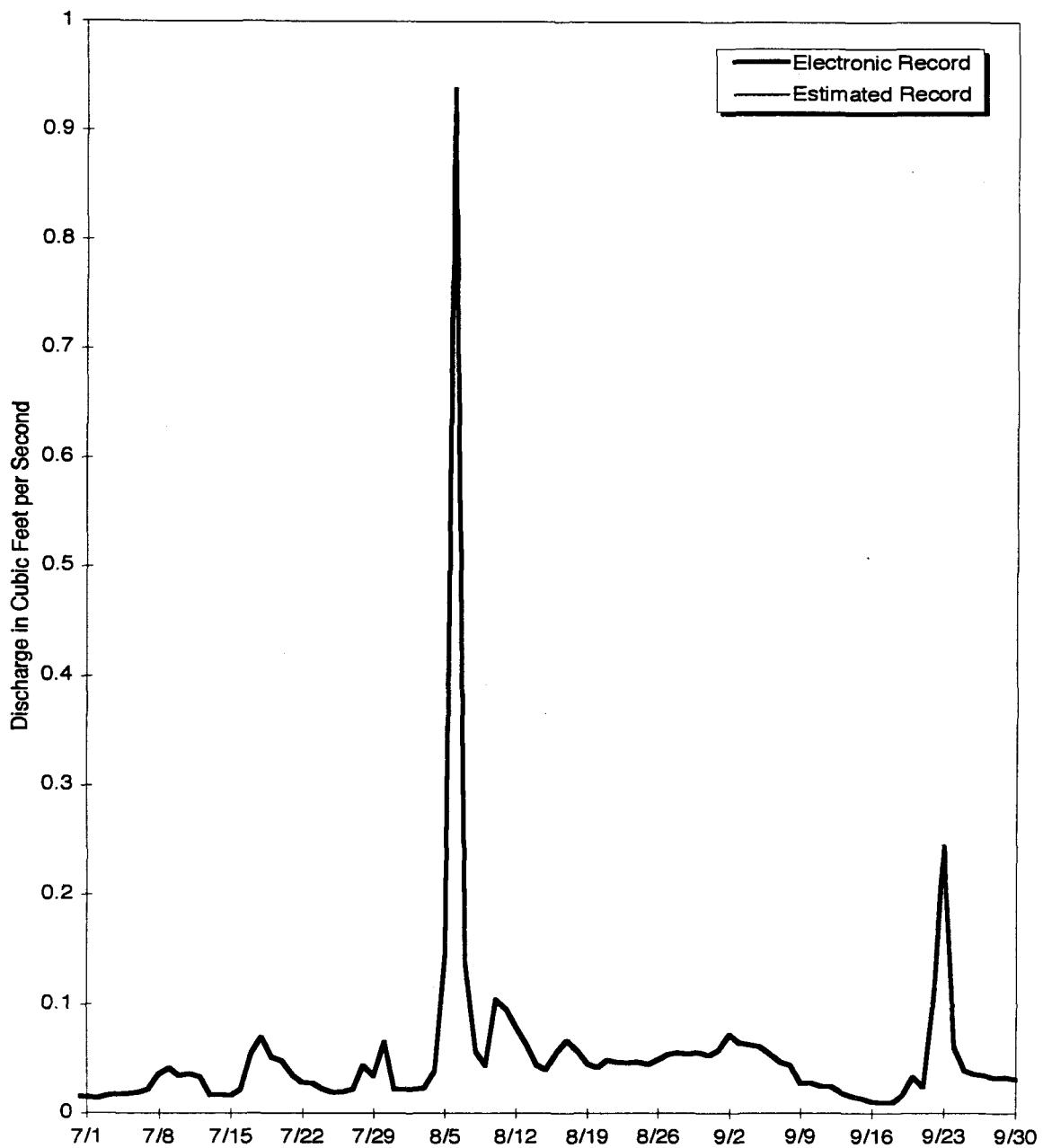
Monthly Discharge

Cubic Feet	2,638,129	310,189	115,426	81,065	232,161	116,617
Gallons	19,734,578	2,320,375	863,445	606,406	1,736,685	872,357
Acre-Feet	60.55	7.12	2.65	1.86	5.33	2.68

Note: Mean flow values are reported to the nearest 0.001 cfs, values less than 0.0005 cfs are reported as zero.

a Contains data estimated from field observations and electronic record at adjacent or comparable gages.

Gaging Station GS05 is located $39^{\circ} 53' 6''N$, $105^{\circ} 13' 17''W$, at Kinnear Ditch and North Woman Creek (See Section 4 Map). This station is a Buffer Zone Monitoring Location and is a monitoring point for water entering North Woman Creek. Storm event samples are collected for selected water quality parameters, metals, and major ions.



**Figure 4-5 Mean Daily Discharge at Gaging Station GS05, Water Year 1997
(July, August, September 1997)**

Table 4-6 Gaging Station GS06: Mean Daily Discharge (Cubic Feet per Second)

Date	April 1997	May 1997	June 1997	July 1997	August 1997	September 1997
1	0.004	0.054	0.006	0.167	0.025	0.129a
2	0.006	0.040	0.006	0.163	0.019	0.189a
3	0.007	0.033	0.006	0.158	0.017	0.192a
4	0.012	0.028	0.006	0.153	0.051	0.080a
5	0.010	0.023	0.006	0.150	0.127	0.037a
6	0.004	0.019	0.016	0.152	0.330	0.006a
7	0.002	0.016	0.010	0.140	0.077	0.001a
8	0.003	0.014	0.008	0.148	0.035	0.000a
9	0.003	0.012	0.007	0.146	0.032	0.000a
10	0.004	0.010	0.006	0.147	0.064	0.000a
11	0.005	0.011	0.004	0.160	0.051	0.000a
12	0.007	0.010	0.003	0.156	0.049	0.000a
13	0.017	0.008	0.004	0.150	0.035	0.000a
14	0.010	0.010	0.006	0.156	0.021	0.003a
15	0.008	0.009	0.004	0.155	0.028	0.011a
16	0.007	0.008	0.004	0.162	0.039	0.036a
17	0.006	0.008	0.004	0.180	0.046	0.073a
18	0.006	0.009	0.003	0.186	0.045	0.114a
19	0.005	0.010	0.003	0.201	0.038	0.204a
20	0.005	0.009	0.003	0.209	0.025	0.117a
21	0.004	0.010	0.003	0.196	0.016	0.098a
22	0.005	0.013	0.003	0.200	0.012	0.102a
23	0.006	0.010	0.048	0.227	0.012	0.211a
24	0.059	0.020	0.112	0.231	0.019	0.076a
25	0.350	0.012	0.152	0.243	0.024a	0.064a
26	0.680	0.010	0.174	0.242	0.030a	0.073a
27	1.890a	0.008	0.167	0.249	0.047a	0.003a
28	0.542	0.008	0.169	0.098	0.045a	0.003a
29	0.161	0.008	0.193	0.070	0.043a	0.003a
30	0.081	0.007	0.184	0.094	0.046a	0.003a
31	NA	0.006	NA	0.052	0.065a	NA
Mo. Avg. (cfs)	0.130	0.015	0.044	0.166	0.049	0.061

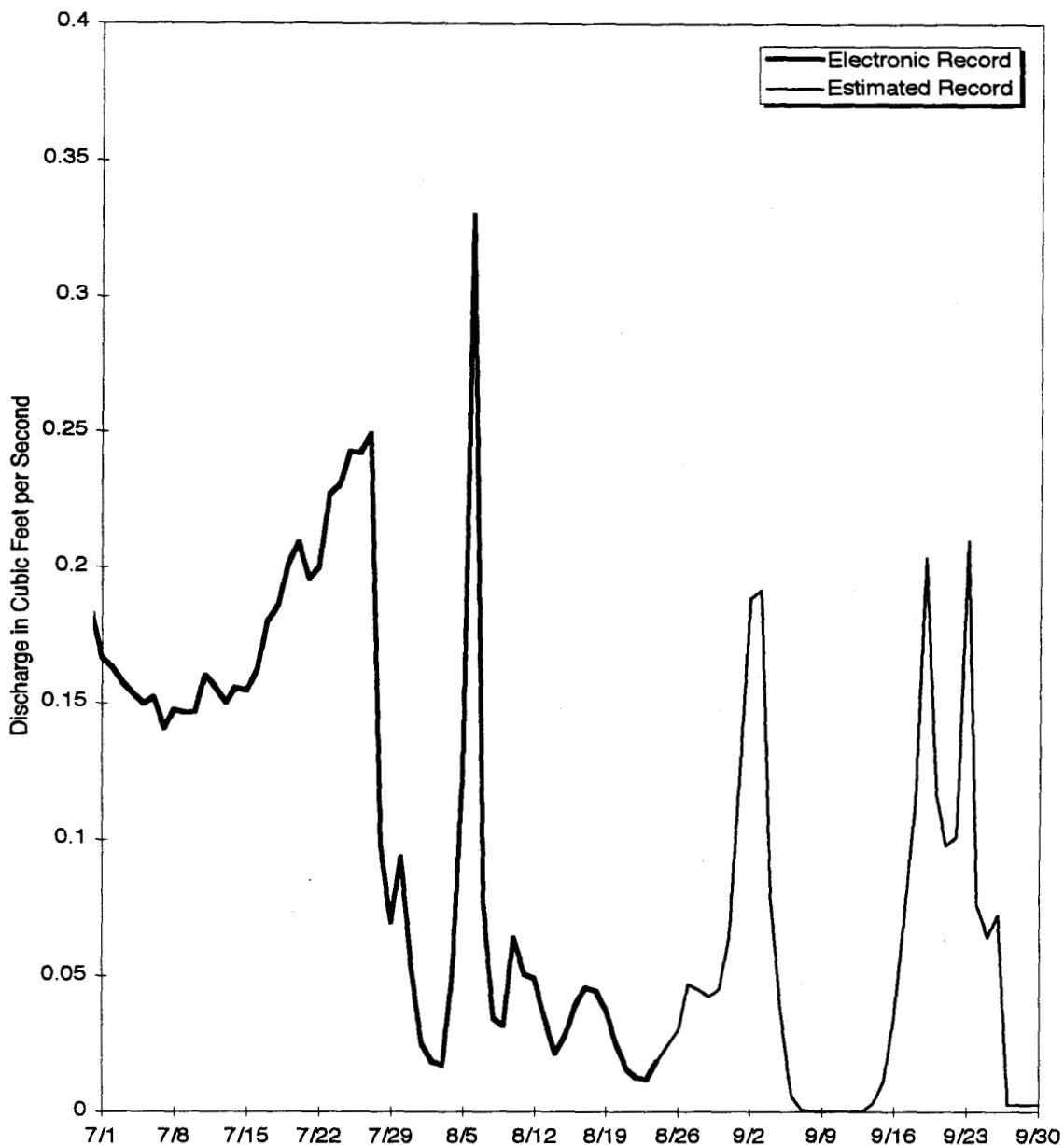
Monthly Discharge

Cubic Feet	337,638	38,969	114,218	444,109	130,520	157,856
Gallons	2,525,706	291,512	854,411	3,322,169	976,355	1,180,844
Acre-Feet	7.75	0.89	2.62	10.19	3.00	3.62

Note: Mean flow values are reported to the nearest 0.001 cfs, values less than 0.0005 cfs are reported as zero.

a Contains data estimated from field observations and electronic record at adjacent or comparable gages.

Gaging Station GS06 is located $39^{\circ} 52' 53''N$, $105^{\circ} 13' 17''W$, on South Woman Creek (See Section 4 Map). This station is a Buffer Zone Monitoring Location and is a monitoring point for water entering South Woman Creek. Storm event samples are collected for selected water quality parameters, metals, and major ions.



**Figure 4-6 Mean Daily Discharge at Gaging Station GS06, Water Year 1997
(July, August, September 1997)**

Table 4-7 Gaging Station GS08: Mean Daily Discharge (Cubic Feet per Second)

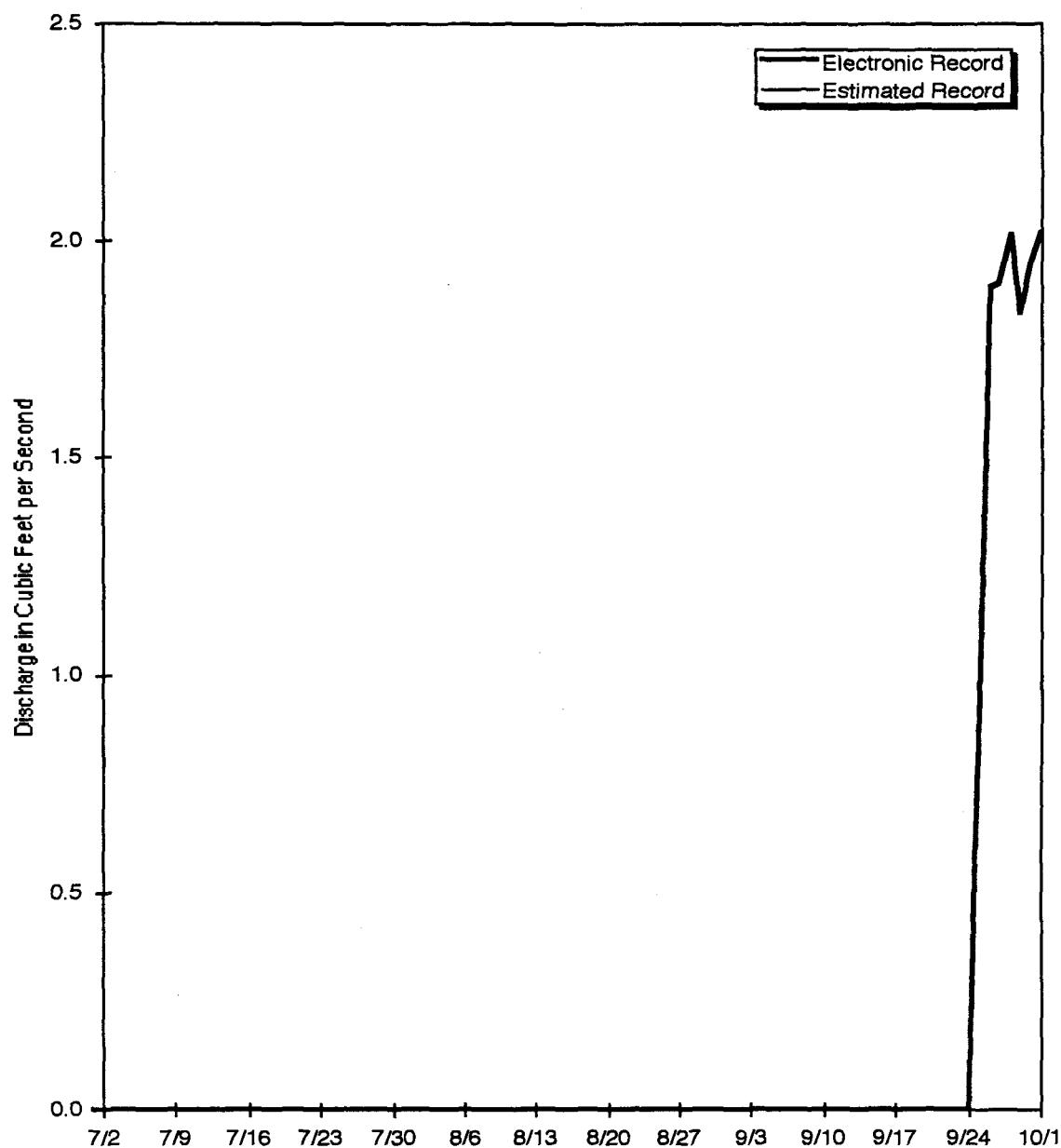
Date	April 1997	May 1997	June 1997	July 1997	August 1997	September 1997
1	0.000	1.652	0.000	0.000	0.000	0.000
2	0.000	1.657	0.000	0.000	0.000	0.000
3	0.000	1.553	0.000	0.000	0.000	0.000
4	0.000	1.315	0.000	0.000	0.000	0.000
5	0.000	1.340	0.000	0.000	0.000	0.000
6	0.000	1.193	0.000	0.000	0.000	0.000
7	0.000	1.079	0.000	0.000	0.000	0.000
8	0.000	1.495	0.000	0.000	0.000	0.000
9	0.000	1.551	0.000	0.000	0.000	0.000
10	0.000	1.375	0.000	0.000	0.000	0.000
11	0.000	0.990	0.000	0.000	0.000	0.000
12	0.000	1.058	0.000	0.000	0.000	0.000
13	0.000	0.000	0.000	0.000	0.000	0.000
14	0.000	0.000	0.000	0.000	0.000	0.000
15	0.000	0.000	0.000	0.000	0.000	0.000
16	0.000	0.000	0.000	0.000	0.000	0.000
17	0.000	0.000	0.000	0.000	0.000	0.000
18	0.000	0.000	0.000	0.000	0.000	0.000
19	0.000	0.000	0.000	0.000	0.000	0.000
20	0.000	0.000	0.000	0.000	0.000	0.000
21	0.000	0.000	0.000	0.000	0.000	0.000
22	0.000	0.000	0.000	0.000	0.000	0.000
23	0.000	0.000	0.000	0.000	0.000	0.000
24	0.000	0.000	0.000	0.000	0.000	0.000
25	0.000	0.000	0.000	0.000	0.000	0.792
26	0.000	0.000	0.000	0.000	0.000	1.894
27	0.000	0.000	0.000	0.000	0.000	1.906
28	1.833	0.000	0.000	0.000	0.000	2.016
29	3.515	0.000	0.000	0.000	0.000	1.838
30	2.302	0.000	0.000	0.000	0.000	1.956
31	NA	0.000	NA	0.000	0.000	2.022
Mo. Avg. (cfs)	0.255	0.524	0.000	0.000	0.000	0.414

Monthly Discharge

Cubic Feet	660,905	1,404,499	0	0	0	1,073,334
Gallons	4,943,915	10,506,382	0	0	0	8,029,094
Acre-Feet	15.17	32.24	0.00	0.00	0.00	24.64

Note: Mean flow values are reported to the nearest 0.001 cfs, values less than 0.0005 cfs are reported as zero.

Gaging Station GS08 is located $39^{\circ} 53' 54''N$, $105^{\circ} 10' 48''W$, at the Pond B-5 Outfall on South Walnut Creek (See Section 4 Map). This station is a RFCA Point of Compliance and monitors water discharged from Pond B-5 to South Walnut Creek. This station collects samples for selected radionuclides using continuous flow-paced sampling.



**Figure 4-7 Mean Daily Discharge at Gaging Station GS08, Water Year 1997
(July, August, September 1997)**

Table 4-8 Gaging Station GS10: Mean Daily Discharge (Cubic Feet per Second)

Date	April 1997	May 1997	June 1997	July 1997	August 1997	September 1997
1	0.054	0.162	0.082	0.062	0.088	0.095
2	0.244	0.135	0.076	0.064	0.082	0.104
3	0.110	0.124	0.071	0.066	0.075	0.063
4	0.961	0.116	0.071	0.068	2.425a	0.074
5	0.519	0.110	0.072	0.070	1.134a	0.067
6	0.098	0.103	1.218a	0.072	2.709a	0.061
7	0.073	0.099	0.370	0.082	0.142	0.058
8	0.066	0.093	0.160	0.081	0.088	0.062
9	0.063	0.090	0.127	0.078	0.089	0.062
10	0.100	0.088	0.131	0.073	0.814	0.064
11	0.335	0.136	0.101	0.069	0.630	0.060
12	0.226	0.106	0.126	0.082	0.265	0.059
13	0.176	0.092	0.131	0.079	0.109	0.063
14	0.094	0.122	0.369	0.079	0.091	0.069
15	0.108	0.105	0.095	0.083	0.084	0.070
16	0.121	0.089	0.101	0.089	0.247	0.069
17	0.075	0.087	0.090	0.097	0.225	0.070
18	0.068	0.082a	0.084	0.095	0.118	0.074
19	0.062	0.088	0.078	0.091	0.119	0.186
20	0.080	0.082	0.073	0.090	0.087	0.143
21	0.060	0.111	0.071	0.087	0.085	0.089
22	0.061	0.401	0.068	0.088	0.083	0.774a
23	0.201	0.112	0.067	0.092a	0.084	1.482a
24	3.224a	0.356	0.101	0.090a	0.084	0.111
25	3.691	0.114	0.071	0.090a	0.082	0.096
26	1.980	0.106	0.073	0.090a	0.087	0.092
27	1.352	0.094	0.075	0.168a	0.091	0.087
28	0.448	0.080	0.077	1.030a	0.082	0.087
29	0.254	0.081	0.075	0.119a	0.075	0.085
30	0.178	0.073	0.068	1.401a	0.071	0.085
31	NA	0.069	NA	0.100	0.070	N/A
Mo. Avg. (cfs)	0.503	0.120	0.146	0.159	0.339	0.152

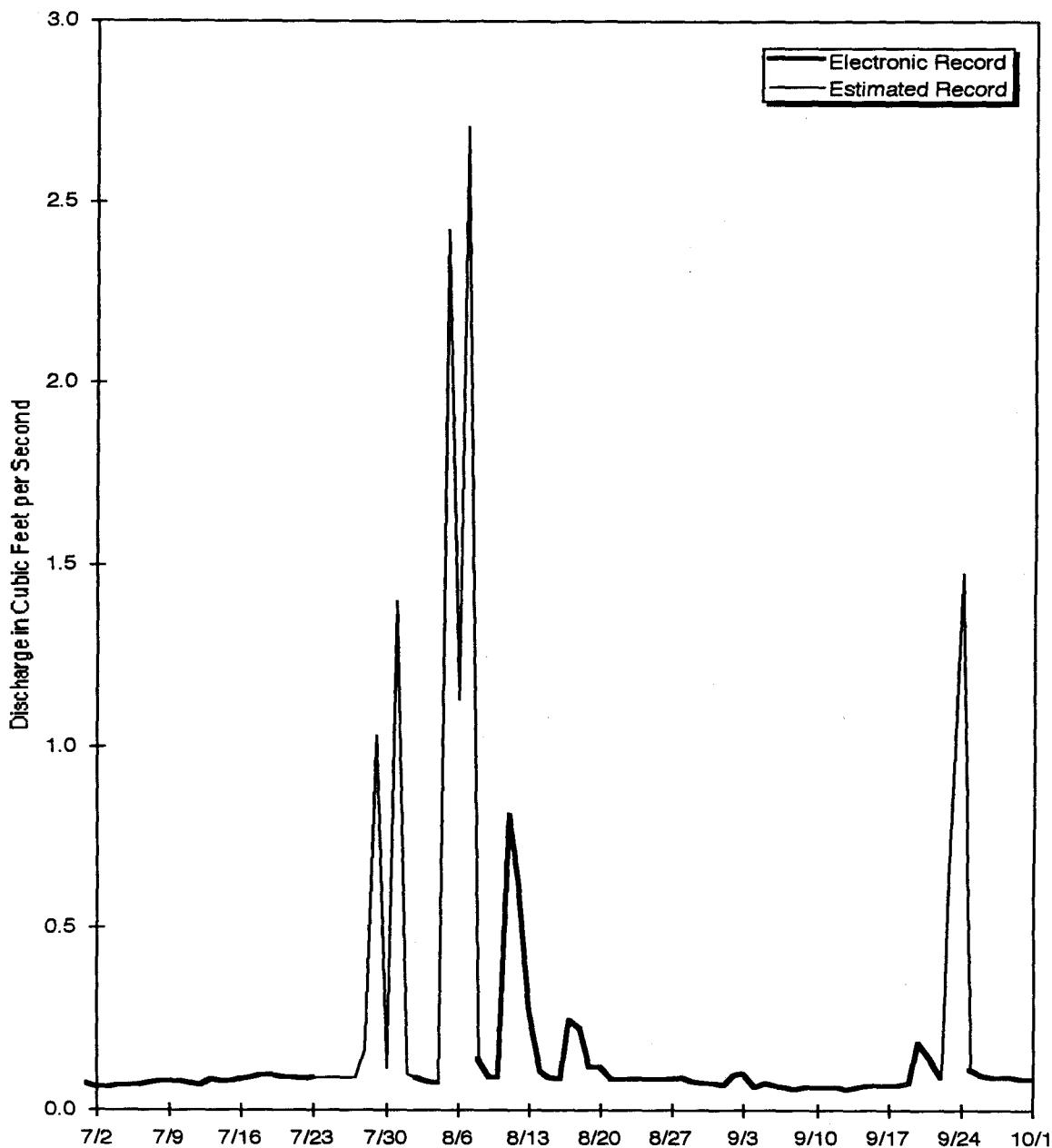
Monthly Discharge

Cubic Feet	1,303,003	320,417	377,816	425,397	908,459	394,128
Gallons	9,747,144	2,396,885	2,826,260	3,182,188	6,795,743	2,948,284
Acre-Feet	29.91	7.35	8.67	9.76	20.85	9.05

Note: Mean flow values are reported to the nearest 0.001 cfs, values less than 0.0005 cfs are reported as zero.

a Contains data estimated from field observations and electronic record at adjacent or comparable gages.

Gaging Station GS10 is located $39^{\circ} 53' 35''N$, $105^{\circ} 11' 27''W$ on South Walnut Creek above the Pond B-1 Bypass (See Section 4 Map). This station is a RFCA Action Level Framework and a New Source Detection Location and monitors water leaving the Site Industrial Area and entering the B-Series Ponds and South Walnut Creek. This station collects samples for selected radionuclides, metals, and water quality parameters using continuous flow-paced sampling.



**Figure 4-8 Mean Daily Discharge at Gaging Station GS10, Water Year 1997
(July, August, September 1997)**

Table 4-9 Gaging Station GS11: Mean Daily Discharge (Cubic Feet per Second)

Date	April 1997	May 1997	June 1997	July 1997	August 1997	September 1997
1	0.000	1.850	0.000	1.422 ^a	0.000	3.259
2	0.000	4.965	0.000	1.080	0.000	3.038
3	1.646	4.744	0.000	1.572	0.000	2.783
4	2.839	4.591	0.000	1.739	0.000	2.729
5	2.755	4.188	0.000	1.324	1.428	2.954
6	2.526	3.794	0.000	0.493	2.671	2.265
7	2.275	3.065	0.000	0.000	2.476	2.265
8	2.084	2.595	0.000	0.000	0.000	1.430
9	1.482	2.118	0.000	0.000	0.000	0.335
10	1.517	1.879	0.000	0.000	0.000	0.000
11	1.432	1.790	0.000	0.000	0.000	0.000
12	1.276	1.617	0.000	0.000	0.000	0.000
13	1.225	1.366	0.000	0.000	0.000	0.000
14	0.000	1.072	0.000	0.000	0.000	0.000
15	0.000	0.000	0.000	0.000	0.000	0.000
16	0.000	0.000	0.000	0.000	0.000	0.000
17	0.000	0.000	0.000	0.000	0.000	0.000
18	0.000	0.000	0.000	0.000	0.000	0.000
19	0.000	0.000	0.000	0.000	0.000	0.000
20	0.000	0.000	0.000	0.000	0.000	0.000
21	0.000	0.000	0.000	0.000	0.000	0.000
22	0.000	0.000	0.000	0.000	0.000	0.000
23	0.000	0.000	0.000	0.000	0.000	0.000
24	0.000	0.000	0.000	0.000	0.000	0.000
25	0.000	0.000	1.197	0.000	0.000	0.000
26	0.000	0.000	2.679	0.000	0.000	0.000
27	0.000	0.000	2.494	0.000	0.000	0.000
28	0.000	0.000	2.353a	0.000	0.000	0.000
29	0.000	0.000	2.203a	0.000	2.033	0.000
30	0.000	0.000	2.053a	0.000	3.448	0.000
31	NA	0.000	NA	0.000	3.446	0.000
Mo. Avg. (cfs)	0.702	1.279	0.433	0.246	0.500	0.626

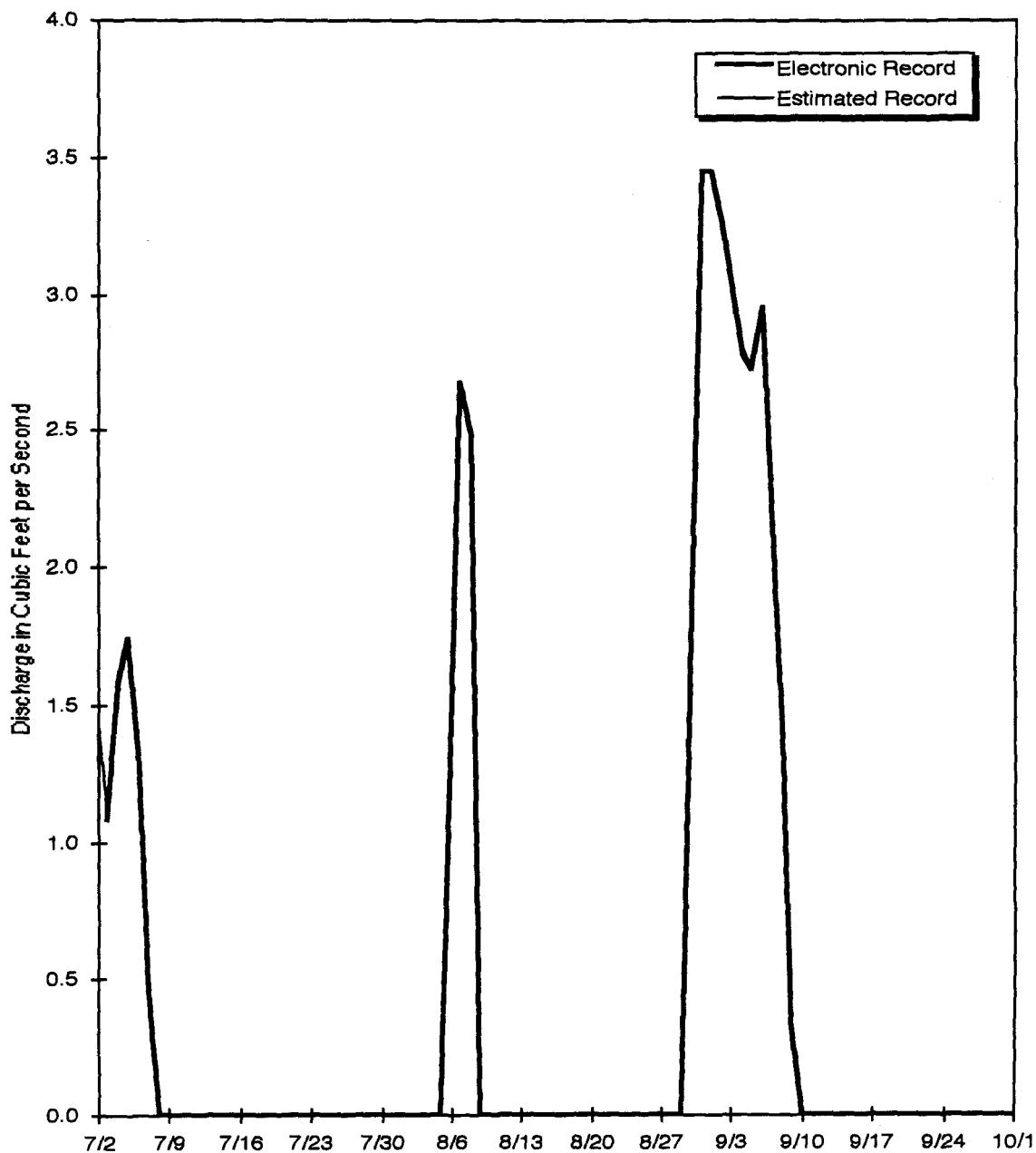
Monthly Discharge

Cubic Feet	1,819,219	3,424,412	1,121,374	659,176	1,339,446	1,623,666
Gallons	13,608,704	25,616,379	8,388,459	4,930,976	10,019,753	12,145,864
Acre-Feet	41.76	78.60	25.74	15.13	30.74	37.27

Note: Mean flow values are reported to the nearest 0.001 cfs, values less than 0.0005 cfs are reported as zero.

a Contains data estimated from field observations and electronic record at adjacent or comparable gages.

Gaging Station GS11 is located $39^{\circ} 54' 3''N$, $105^{\circ} 10' 47''W$, at the Pond A-4 Outfall on North Walnut Creek (See Section 4 Map). This station is a RFCA Point of Compliance and monitors water discharged from Pond A-4 to North Walnut Creek. This station collects samples for selected radionuclides using continuous flow-paced sampling.



**Figure 4-9 Mean Daily Discharge at Gaging Station GS11, Water Year 1997
(July, August, September 1997)**

Table 4-10 Gaging Station GS16: Mean Daily Discharge (Cubic Feet per Second)

Date	April 1997	May 1997	June 1997	July 1997	August 1997	September 1997
1	0.099	0.165	0.078	b	b	b
2	0.135	0.151	0.077	b	b	b
3	0.216	0.151	0.072	b	b	b
4	0.282	0.138	0.069	b	b	b
5	0.297	0.133	0.067	b	b	b
6	0.164	0.121	0.210	b	b	b
7	0.124	0.112	0.191	b	b	b
8	0.120	0.117	0.117	b	b	b
9	0.123	0.120	0.117	b	b	b
10	0.187	0.111	0.119	b	b	b
11	0.226	0.139	0.081	b	b	b
12	0.282	0.145	0.082	b	b	b
13	0.322	0.114	0.108	b	b	b
14	0.181	0.139	0.157	b	b	b
15	0.147	0.143	0.081	b	b	b
16	0.154	0.112	0.079	b	b	b
17	0.122	0.096	0.076	b	b	b
18	0.116	0.099	0.067	b	b	b
19	0.106	0.113	0.058	b	b	b
20	0.103	0.100	0.051	b	b	b
21	0.099	0.106	0.051	b	b	b
22	0.105	0.203	0.046	b	b	b
23	0.143	0.145	0.048	b	b	b
24	0.672	0.199	0.054	b	b	b
25	0.591	0.147	0.055	b	b	b
26	0.804	0.112	0.051	b	b	b
27	1.785a	0.095	0.044	b	b	b
28	1.237	0.102	0.044	b	b	b
29	0.271	0.114	0.041	b	b	b
30	0.183	0.103	0.038	b	b	b
31	N/A	0.086	N/A	b	b	b
Mo. Avg. (cfs)	0.313	0.127	0.081	b	b	b

Monthly Discharge

Cubic Feet	811,911	339,762	209,743	b	b	b
Gallons	6,073,519	2,541,598	1,568,987	b	b	b
Acre-Feet	18.64	7.80	4.81	b	b	b

Note: Mean flow values are reported to the nearest 0.001 cfs, values less than 0.0005 cfs are reported as zero.

a Contains data estimated from field observations and electronic record at adjacent or comparable gages.

b Data unavailable at the time of printing.

Gaging Station GS16 is located 39° 53' 1"N, 105° 12' 8"W along Antelope Springs Gulch, south of Woman Creek (See Section 4 Map). This station is a Buffer Zone Monitoring Location and is a monitoring point for water entering Woman Creek from Antelope Springs. No samples are collected at this location.

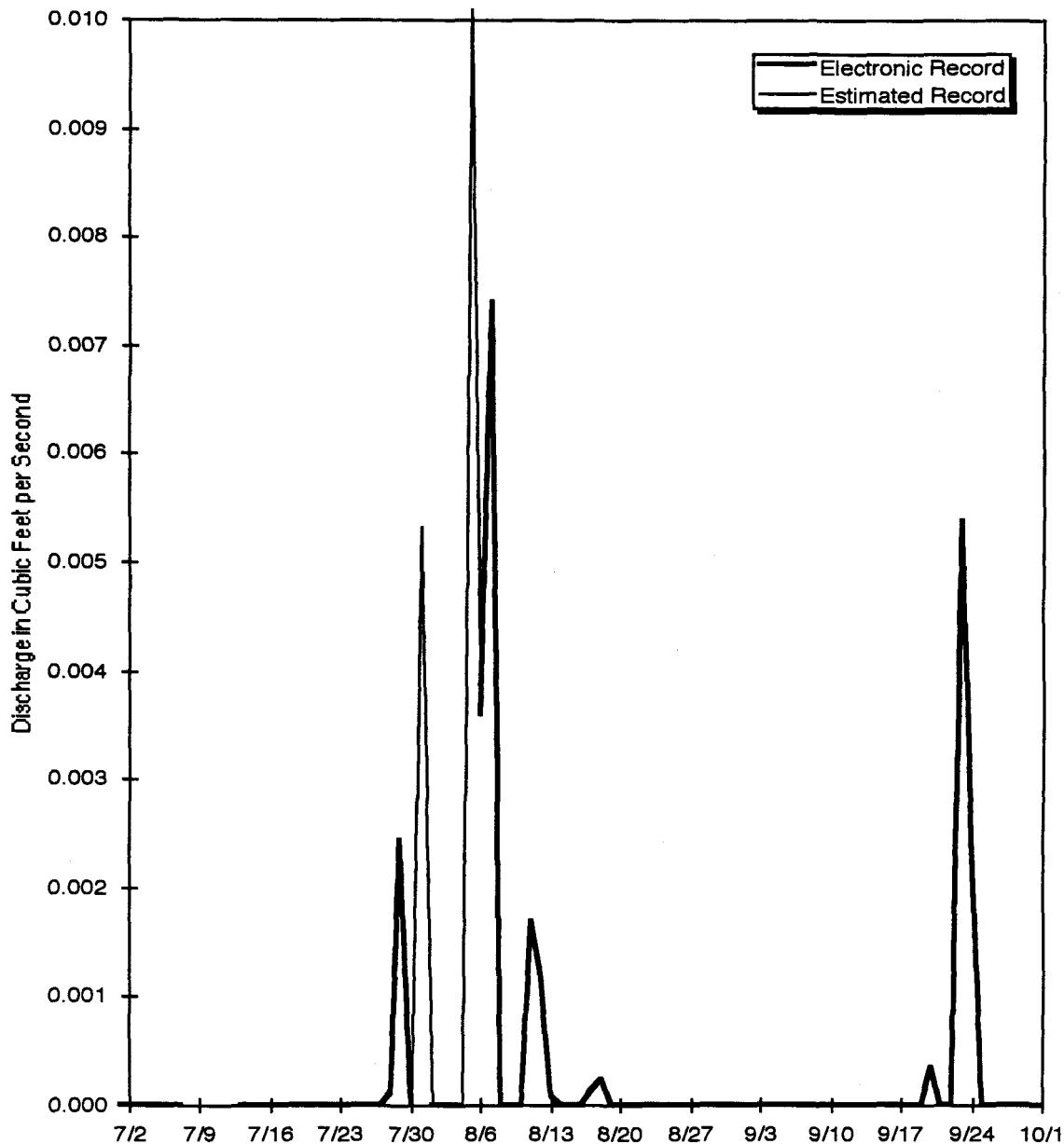
Gaging Station GS16 is unavailable.

***Figure 4-10 Mean Daily Discharge at Gaging Station GS16, Water Year 1997
(July, August, September 1997)***

Table 4-11 Gaging Station GS27: Mean Daily Discharge (Cubic Feet per Second)

Date	April 1997	May 1997	June 1997	July 1997	August 1997	September 1997
1	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2	0.0002	0.0000	0.0000	0.0000	0.0000	0.0000
3	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
4	0.0029	0.0000	0.0000	0.0000	0.0103a	0.0000
5	0.0002	0.0000	0.0000	0.0000	0.0036	0.0000
6	0.0000	0.0000	0.0040	0.0000	0.0074	0.0000
7	0.0000	0.0000	0.0001a	0.0000a	0.0000	0.0000
8	0.0000	0.0000	0.0001a	0.0000a	0.0000	0.0000
9	0.0000	0.0000	0.0000a	0.0000a	0.0000	0.0000
10	0.0000	0.0000	0.0000a	0.0000a	0.0017	0.0000
11	0.0010	0.0000	0.0000	0.0000a	0.0012	0.0000
12	0.0006	0.0000	0.0000	0.0000	0.0001	0.0000
13	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
14	0.0000	0.0000	0.0007	0.0000	0.0000	0.0000
15	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
16	0.0000	0.0000	0.0000	0.0000	0.0001	0.0000
17	0.0000	0.0000	0.0000	0.0000	0.0002	0.0000
18	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
19	0.0000	0.0000	0.0000	0.0000	0.0000	0.0004
20	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
21	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
22	0.0000	0.0007	0.0000	0.0000	0.0000	0.0054
23	0.0004	0.0000	0.0000	0.0000	0.0000	0.0021
24	0.0112	0.0006	0.0001	0.0000	0.0000	0.0000
25	0.0143	0.0000	0.0000	0.0000	0.0000	0.0000
26	0.0070	0.0000	0.0000	0.0000	0.0000	0.0000
27	0.0012	0.0000	0.0000	0.0001	0.0000	0.0000
28	0.0000	0.0000	0.0000	0.0024	0.0000	0.0000
29	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
30	0.0000	0.0000	0.0000	0.0053a	0.0000	0.0000
31	NA	0.0000	NA	0.0000	0.0000	NA
Mo. Avg. (cfs)	0.001	0.000	0.000	0.000	0.001	0.000
Monthly Discharge						
Cubic Feet	3,371	111	437	681	2,125	680
Gallons	25,215	833	3,268	5,094	15,895	5,087
Acre-Feet	0.077	0.003	0.010	0.016	0.049	0.016
Note:	Mean flow values are reported to the nearest 0.001 cfs, values less than 0.0005 cfs are reported as zero.					
a	Contains data estimated from field observations and electronic record at adjacent or comparable gages.					

Gaging Station GS27 is located at State Plane 2080529; 751216, at the small drainage ditch NW of Building 884 (See Section 4 Map). This location is a Performance and Best Management Practices Monitoring Location and monitors water draining from the Building 889 area. Storm event samples are collected for selected radionuclides, water quality parameters, and metals.



***Figure 4-11 Mean Daily Discharge at Gaging Station GS27, Water Year 1997
(July, August, September 1997)***

Table 4-12 Gaging Station GS28 Mean Daily Discharge (Cubic Feet per Second)

Date	April 1997	May 1997	June 1997	July 1997	August 1997	September 1997
1	0.0000	0.0000	0.0000	0.0000	0.0000	No Data
2	0.0000	0.0000	0.0000	0.0000	0.0000	No Data
3	0.0000	0.0000	0.0000	0.0000	0.0000	No Data
4	0.0028	0.0000	0.0000	0.0000	0.0411a	No Data
5	0.0056	0.0000	0.0000	0.0000	0.0167	No Data
6	0.0000	0.0000	0.0114	0.0000	0.0446a	No Data
7	0.0000	0.0000	0.0000	0.0000	0.0000	No Data
8	0.0000	0.0000	0.0000	0.0000	0.0000	No Data
9	0.0000	0.0000	0.0000	0.0000	0.0000	No Data
10	0.0000	0.0000	0.0000	0.0000	0.0016	No Data
11	0.0000	0.0000	0.0000	0.0000	0.0017	No Data
12	0.0000	0.0000	0.0000	0.0000	0.0000	No Data
13	0.0006	0.0000	0.0000	0.0000	0.0000	No Data
14	0.0000	0.0000	0.0000	0.0000	0.0000	No Data
15	0.0000	0.0000	0.0000	0.0000	0.0000	No Data
16	0.0000	0.0000	0.0000	0.0000	0.0000	No Data
17	0.0000	0.0000	0.0000	0.0000	0.0000	No Data
18	0.0000	0.0000	0.0000	0.0000	0.0000	No Data
19	0.0000	0.0000	0.0000	0.0000	0.0000	No Data
20	0.0000	0.0000	0.0000	0.0000	0.0000	No Data
21	0.0000	0.0000	0.0000	0.0000	0.0000	No Data
22	0.0000	0.0000	0.0000	0.0000	0.0000	No Data
23	0.0000	0.0000	0.0000	0.0000	0.0000	No Data
24	0.0473	0.0000	0.0000	0.0000	0.0000	No Data
25	0.0562	0.0000	0.0000	0.0000	0.0000	No Data
26	0.0292	0.0000	0.0000	0.0000	0.0000	No Data
27	0.0479	0.0000	0.0000	0.0000	No Data	No Data
28	0.0000	0.0000	0.0000	0.0129	No Data	No Data
29	0.0000	0.0000	0.0000	0.0000	No Data	No Data
30	0.0000	0.0000	0.0000	0.0259a	No Data	No Data
31	NA	0.0000	NA	0.0000	No Data	NA
Mo. Avg. (cfs)	0.0063	0.0000	0.0004	0.0013	0.0041	No Data

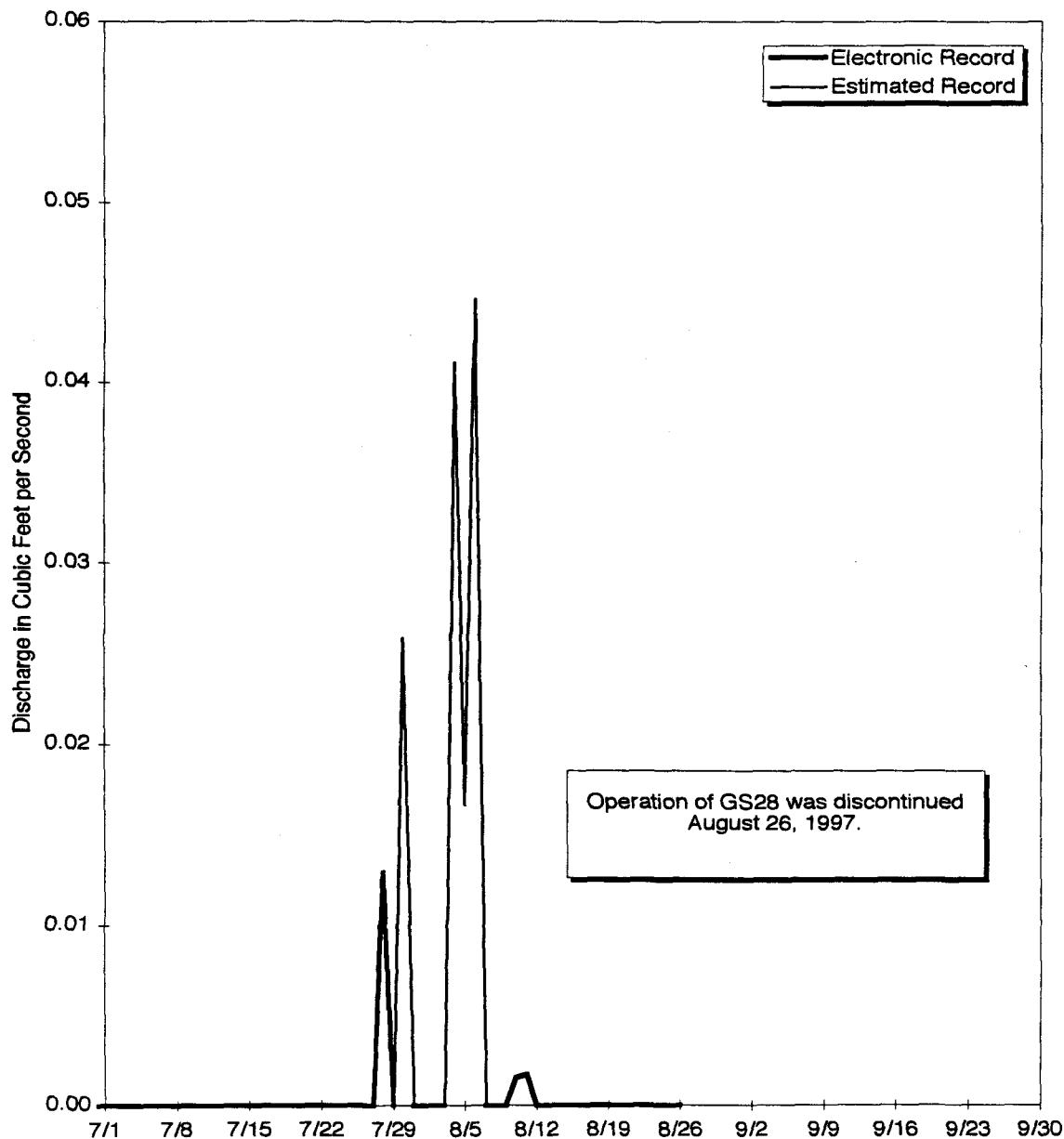
Monthly Discharge

Cubic Feet	16,381	0	984	3,357	9,139	0
Gallons	122,538	0	7,359	25,113	68,366	0
Acre-Feet	0.376	0.000	0.023	0.077	0.210	0.000

Note: Mean flow values are reported to the nearest 0.001 cfs, values less than 0.0005 cfs are reported as zero.

a Contains data estimated from field observations and electronic record at adjacent or comparable gages.

Gaging Station GS28 is located at State Plane 2084010; 749282, at the drainage ditch NE of Building 889 (See Section 4 Map). This location is a Performance Monitoring Location and monitors water draining from the Building 889 area. Storm event samples are collected for selected radionuclides, water quality parameters, and metals.



***Figure 4-12 Mean Daily Discharge at Gaging Station GS28, Water Year 1997
(July, August, September 1997)***

Table 4-13 Gaging Station GS31: Mean Daily Discharge (Cubic Feet per Second)

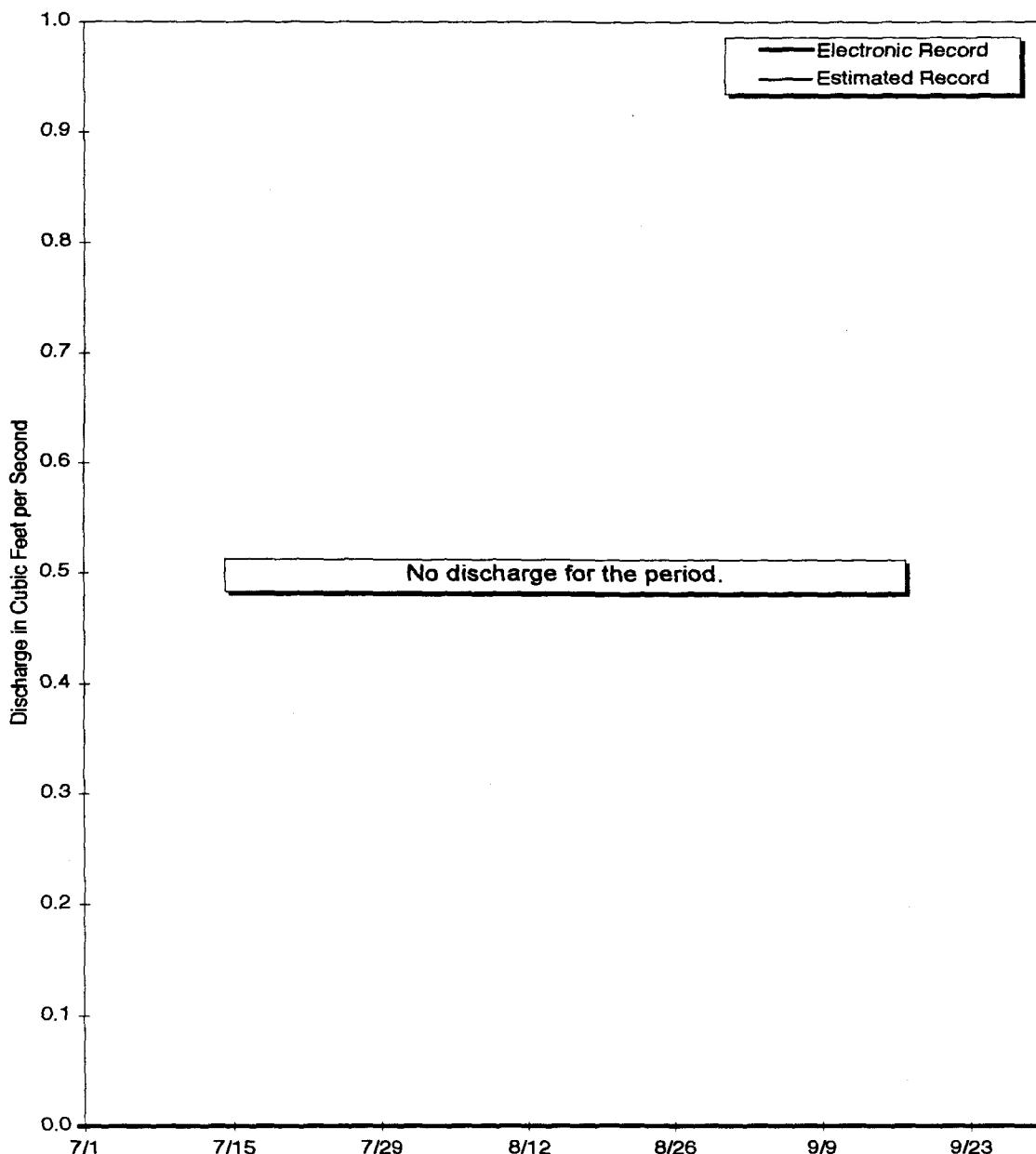
Date	April 1997	May 1997	June 1997	July 1997	August 1997	September 1997
1	0.000	0.000	0.000	0.000	0.000	0.000
2	0.000	0.000	0.000	0.000	0.000	0.000
3	0.000	0.000	0.000	0.000	0.000	0.000
4	0.000	0.000	0.000	0.000	0.000	0.000
5	0.000	0.000	0.000	0.000	0.000	0.000
6	0.000	0.000	0.000	0.000	0.000	0.000
7	0.000	0.000	0.000	0.000	0.000	0.000
8	0.000	0.000	0.000	0.000	0.000	0.000
9	0.000	0.000	0.000	0.000	0.000	0.000
10	0.000	0.000	0.000	0.000	0.000	0.000
11	0.000	0.000	0.000	0.000	0.000	0.000
12	0.000	0.000	0.000	0.000	0.000	0.000
13	0.000	0.000	0.000	0.000	0.000	0.000
14	0.000	0.000	0.000	0.000	0.000	0.000
15	0.000	0.000	0.000	0.000	0.000	0.000
16	0.000	0.000	0.000	0.000	0.000	0.000
17	0.000	0.000	0.000	0.000	0.000	0.000
18	0.000	0.000	0.000	0.000	0.000	0.000
19	0.000	0.000	0.000	0.000	0.000	0.000
20	0.000	0.000	0.000	0.000	0.000	0.000
21	0.000	0.000	0.000	0.000	0.000	0.000
22	0.000	0.000	0.000	0.000	0.000	0.000
23	0.000	0.000	0.000	0.000	0.000	0.000
24	0.000	0.000	0.000	0.000	0.000	0.000
25	0.000	0.000	0.000	0.000	0.000	0.000
26	0.000	0.000	0.000	0.000	0.000	0.000
27	0.000	0.000	0.000	0.000	0.000	0.000
28	0.000	0.000	0.000	0.000	0.000	0.000
29	0.000	0.000	0.000	0.000	0.000	0.000
30	0.000	0.000	0.000	0.000	0.000	0.000
31	NA	0.000	NA	0.000	0.000	NA
Mo. Avg. (cfs)	0.000	0.000	0.000	0.000	0.000	0.000

Monthly Discharge

Cubic Feet	0	0	0	0	0	0
Gallons	0	0	0	0	0	0
Acre-Feet	0.00	0.00	0.00	0.00	0.00	0.00

Note: Mean flow values are reported to the nearest 0.001 cfs, values less than 0.0005 cfs are reported as zero.

Gaging Station GS31 is located at State Plane 2089268; 747506, at the Pond C-2 Outfall (See Section 4 Map). This station is a RFCA Point of Compliance and monitors water discharged from Pond C-2. This station collects samples for selected radionuclides using continuous flow-paced sampling.



**Figure 4-13 Mean Daily Discharge at Gaging Station GS31, Water Year 1997
(July, August, September 1997)**

Table 4-14 Gaging Station SW022 Mean Daily Discharge (Cubic Feet per Second)

Date	April 1997	May 1997	June 1997	July 1997	August 1997	September 1997
1	0.000	0.000	0.000	0.000	0.000	0.000
2	0.044	0.000	0.000	0.000	0.000	0.000
3	0.000	0.000	0.000	0.000	0.000	0.000
4	0.380	0.000	0.000	0.000	0.848a	0.000
5	0.186	0.000	0.000	0.000	0.472a	0.000a
6	0.000a	0.000	0.409	0.000	1.217	0.000
7	0.000	0.000	0.182	0.000	0.034	0.000
8	0.000	0.000	0.005	0.000	0.002	0.000
9	0.000	0.000	0.000	0.000	0.000	0.000
10	0.000	0.000	0.000	0.000	0.337	0.000
11	0.099a	0.000	0.000	0.000	0.255	0.000
12	0.044a	0.000	0.000	0.000	0.088	0.000
13	0.014a	0.000	0.001	0.000	0.007	0.000
14	0.000a	0.000	0.125	0.000	0.000	0.000
15	0.000	0.000	0.000	0.000	0.000	0.000
16	0.000	0.000	0.000	0.000	0.068	0.000
17	0.000	0.000	0.000	0.000	0.056	0.000
18	0.000	0.000	0.000	0.000	0.000	0.000
19	0.000	0.000	0.000	0.000	0.035	0.006
20	0.000	0.000	0.000	0.000	0.002	0.018
21	0.000	0.000	0.000	0.000	0.000	0.000
22	0.000	0.088	0.000	0.000	0.000	0.134a
23	0.007	0.000	0.000	0.000	0.000	0.605a
24	1.371a	0.106	0.000	0.000	0.000	0.000
25	1.848	0.004	0.000	0.000	0.000	0.000
26	0.758	0.000	0.000	0.000	0.000	0.000
27	0.410	0.000	0.000	0.000	0.000	0.000
28	0.071	0.000	0.000	0.317a	0.000	0.000
29	0.018	0.007	0.000	0.002	0.000	0.000a
30	0.002	0.000	0.000	0.437	0.000	0.000
31	NA	0.000	NA	0.005	0.000	NA
Mo. Avg. (cfs)	0.175	0.007	0.024	0.025	0.110	0.025

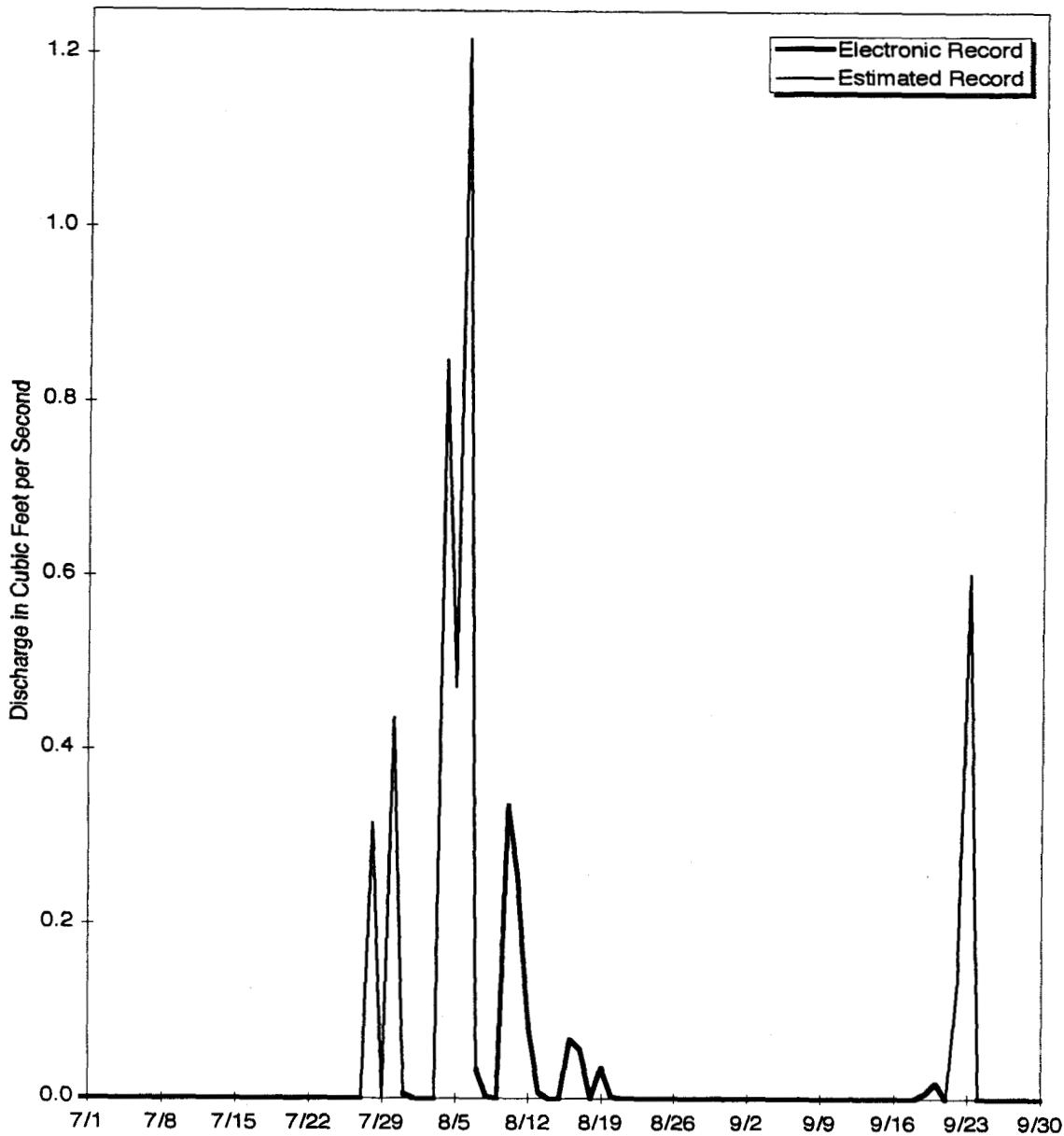
Monthly Discharge

Cubic Feet	453,710	17,766	62,369	65,741	295,583	65,947
Gallons	3,393,985	132,898	466,556	491,775	2,211,112	493,316
Acre-Feet	10.41	0.41	1.43	1.51	6.78	1.51

Note: Mean flow values are reported to the nearest 0.001 cfs, values less than 0.0005 cfs are reported as zero.

a Contains data estimated from field observations and electronic record at adjacent or comparable gages.

Gaging Station SW022 is located $39^{\circ} 53' 30''N$, $105^{\circ} 11' 30''W$, at the Central Avenue Ditch at the Inner East Gate (See Section 4 Map). This location is a RFCA New Source Detection Location and monitors water in the Central Avenue Ditch entering the B-Series Ponds and South Walnut Creek. Storm event samples are collected for selected radionuclides.



**Figure 4-14 Mean Daily Discharge at Gaging Station SW022, Water Year 1997
(July, August, September 1997)**

Table 4-15 Gaging Station SW027: Mean Daily Discharge (Cubic Feet per Second)

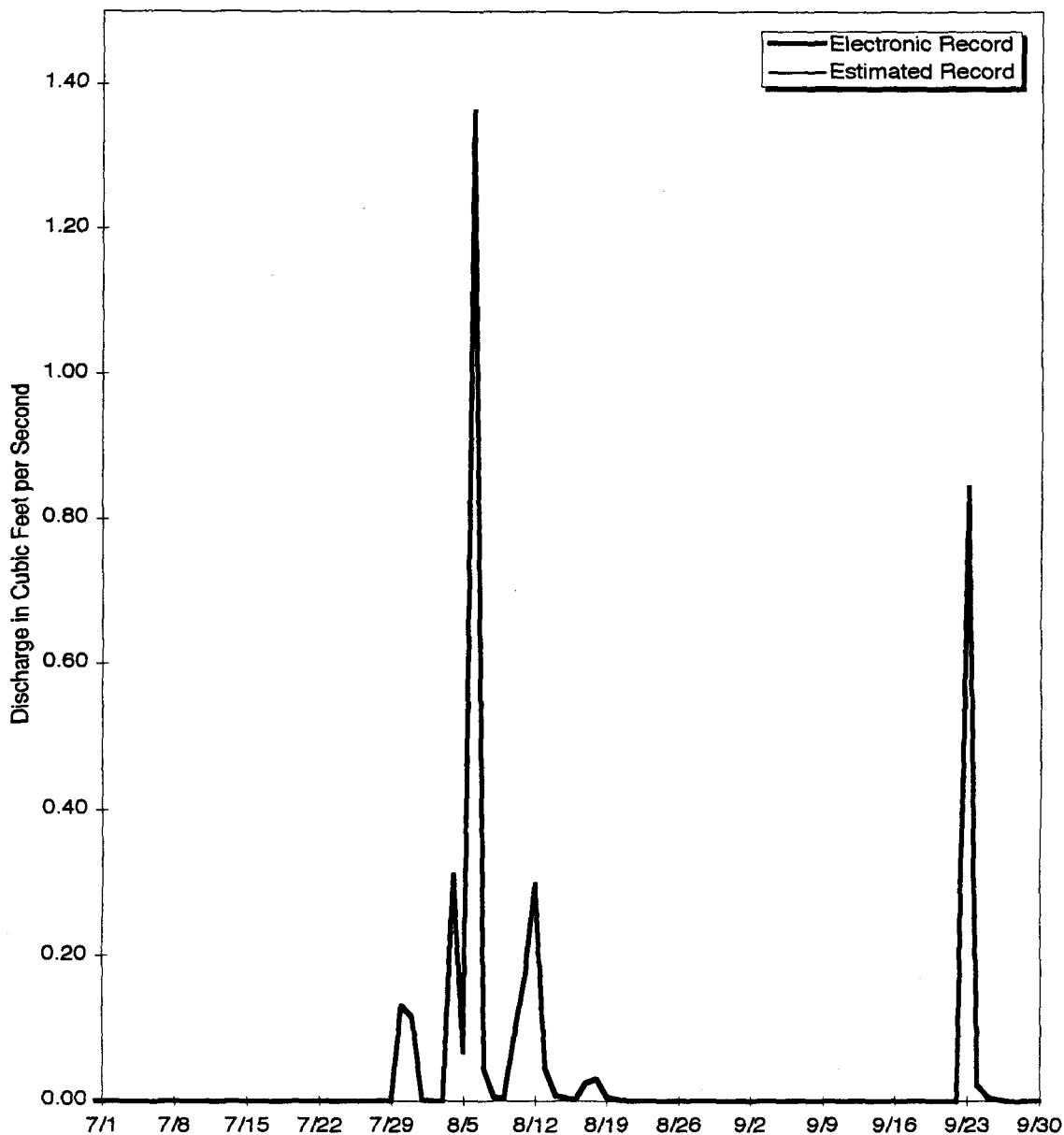
Date	April 1997	May 1997	June 1997	July 1997	August 1997	September 1997
1	0.000	0.020	0.000	0.000	0.002	0.000
2	0.000	0.005	0.000	0.000	0.000	0.000
3	0.000	0.003	0.000	0.000	0.000	0.000
4	0.034	0.002	0.000	0.000	0.312	0.000
5	0.445	0.001	0.000	0.000	0.068	0.000
6	0.051	0.001	0.000	0.000	1.363	0.000
7	0.005	0.001	0.362	0.000	0.045	0.000
8	0.002	0.001	0.009	0.000	0.005	0.000
9	0.001	0.000	0.003	0.000	0.002	0.000
10	0.001	0.000	0.002	0.000	0.089	0.000
11	0.001	0.000	0.001	0.000	0.171	0.000
12	0.054	0.000	0.000	0.000	0.298	0.000
13	0.156	0.000	0.000	0.000	0.046	0.000
14	0.054	0.000	0.077	0.000	0.007	0.000
15	0.007	0.000	0.011	0.000	0.004	0.000
16	0.003	0.000	0.004	0.000	0.002	0.000
17	0.002	0.000	0.001	0.000	0.024	0.000
18	0.002	0.000	0.000	0.000	0.031	0.000
19	0.001	0.000	0.000	0.000	0.006	0.000
20	0.000	0.000	0.000	0.000	0.002	0.000
21	0.000	0.000	0.000	0.000	0.000	0.000
22	0.000	0.000	0.000	0.000	0.000	0.000
23	0.000	0.011	0.000	0.000	0.000	0.845
24	1.046	0.048	0.000	0.000	0.000	0.022
25	1.519	0.080	0.000	0.000	0.000	0.005
26	1.193	0.005	0.000	0.000	0.000	0.002
27	1.229	0.002	0.000	0.000	0.000	0.000
28	0.474	0.001	0.000	0.000	0.000	0.000
29	0.085	0.000	0.000	0.000	0.000	0.000
30	0.022	0.000	0.000	0.132	0.000	0.000
31	NA	0.000	NA	0.116	0.000	NA
Mo. Avg. (cfs)	0.213	0.006	0.016	0.008	0.080	0.029

Monthly Discharge

Cubic Feet	552,090	15,687	40,661	21,398	213,818	75,539
Gallons	4,129,923	117,346	304,162	160,0066	1,599,468	565,073
Acre-Feet	12.67	0.36	0.93	0.49	4.91	1.73

Note: Mean flow values are reported to the nearest 0.001 cfs, values less than 0.0005 cfs are reported as zero.

Gaging Station SW027 is located $39^{\circ} 53' 12''N$, $105^{\circ} 11' 4''W$, at the South Interceptor Ditch above Pond C-2 (See Section 4 Map). This station is a RFCA Action Level Framework and a New Source Detection Location and monitors water in the South Interceptor Ditch entering Pond C-2. This station collects samples for selected radionuclides, metals, and water quality parameters using continuous flow-paced sampling.



**Figure 4-15 Mean Daily Discharge at Gaging Station SW027, Water Year 1997
(July, August, September 1997)**

Table 4-16 Gaging Station SW091: Mean Daily Discharge (Cubic Feet per Second)

Date	April 1997	May 1997	June 1997	July 1997	August 1997	September 1997
1	0.0000	0.0003	0.0000a	0.0000	0.0000	0.0000
2	0.0000	0.0001	0.0000a	0.0000	0.0000	0.0000
3	0.0000	0.0001a	0.0000a	0.0000	0.0000	0.0000
4	0.0002a	0.0000a	0.0000a	0.0000	0.0544	0.0000
5	0.0007a	0.0000a	0.0000a	0.0000	0.0156	0.0000
6	0.0000a	0.0000a	0.0012a	0.0000	0.0412a	0.0000
7	0.0000a	0.0000a	0.0000a	0.0000	0.0007	0.0000
8	0.0000	0.0000a	0.0000a	0.0000	0.0000	0.0000
9	0.0000	0.0000a	0.0000a	0.0000	0.0000	0.0000
10	0.0000	0.0000a	0.0000a	0.0000	0.0007	0.0000
11	0.0006a	0.0000a	0.0000a	0.0000	0.0015	0.0000
12	0.0007a	0.0000a	0.0000a	0.0000	0.0003	0.0000
13	0.0012a	0.0000a	0.0001	0.0000	0.0000	0.0000
14	0.0001a	0.0000a	0.0002	0.0000	0.0000	0.0000
15	0.0003	0.0000a	0.0002	0.0000	0.0000	0.0000
16	0.0001	0.0000a	0.0000	0.0000	0.0000	0.0000
17	0.0000a	0.0000a	0.0000	0.0000	0.0000	0.0000
18	0.0000	0.0000a	0.0000	0.0000	0.0000	0.0000
19	0.0000	0.0000a	0.0000	0.0000	0.0000	0.0000
20	0.0000	0.0000a	0.0000	0.0000	0.0000	0.0000
21	0.0000	0.0000a	0.0000	0.0000	0.0000	0.0000
22	0.0000	0.0000a	0.0000	0.0000	0.0000	0.0000
23	0.0001	0.0000a	0.0000	0.0000	0.0000	0.0006
24	0.0144	0.0000a	0.0000	0.0000	0.0000	0.0000
25	0.0486	0.0000a	0.0000	0.0000	0.0000	0.0000
26	0.0481	0.0000a	0.0000	0.0000	0.0000	0.0000
27	0.0276	0.0000a	0.0000	0.0000	0.0000	0.0000
28	0.0071	0.0000a	0.0000	0.0000	0.0000	0.0000
29	0.0041	0.0000a	0.0000	0.0000	0.0000	0.0000
30	0.0005	0.0000a	0.0000	0.0005	0.0000	0.0000
31	NA	0.0000a	NA	0.0000	0.0000	NA
Mo. Avg. (cfs)	0.005	0.000	0.000	0.000	0.004	0.000

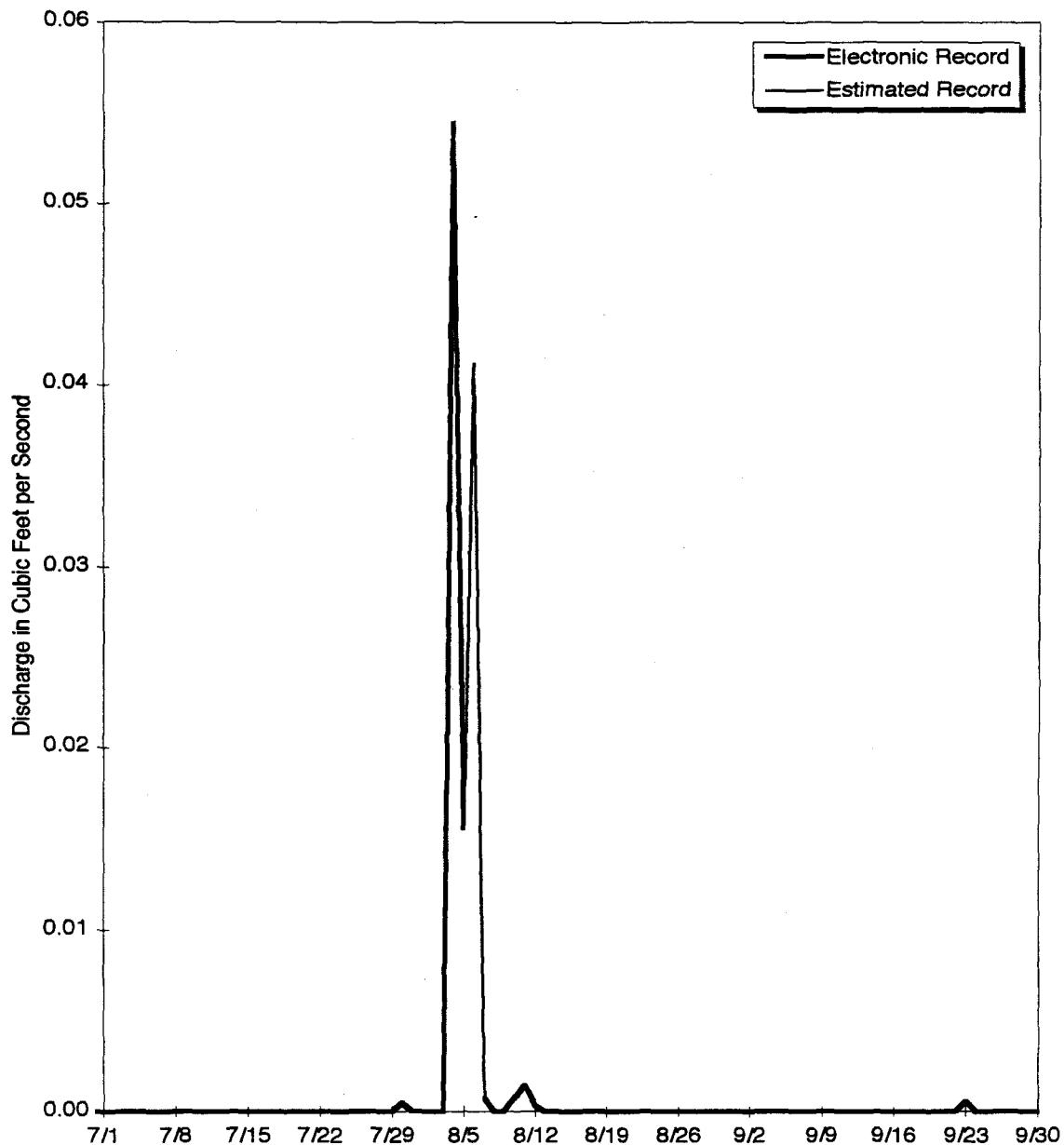
Monthly Discharge

Cubic Feet	13,332	47	153	42	9,893	48
Gallons	99,727	354	1,141	318	74,001	358
Acre-Feet	0.3060	0.0011	0.0035	0.0010	0.2271	0.0011

Note: Mean flow values are reported to the nearest 0.001 cfs, values less than 0.0005 cfs are reported as zero.

a Contains data estimated from field observations and electronic record at adjacent or comparable gages.

Gaging Station SW091 is located at State Plane 2086064; 751322, along the drainage NE of the Solar Ponds draining to the A-Series Ponds (See Section 4 Map). This location is a RFCA New Source Detection Location and monitors water draining from the area NE of the Solar Ponds. Storm event samples are collected for selected radionuclides.



**Figure 4-16 Mean Daily Discharge at Gaging Station SW091, Water Year 1997
(July, August, September 1997)**

Table 4-17 Gaging Station SW093: Mean Daily Discharge (Cubic Feet per Second)

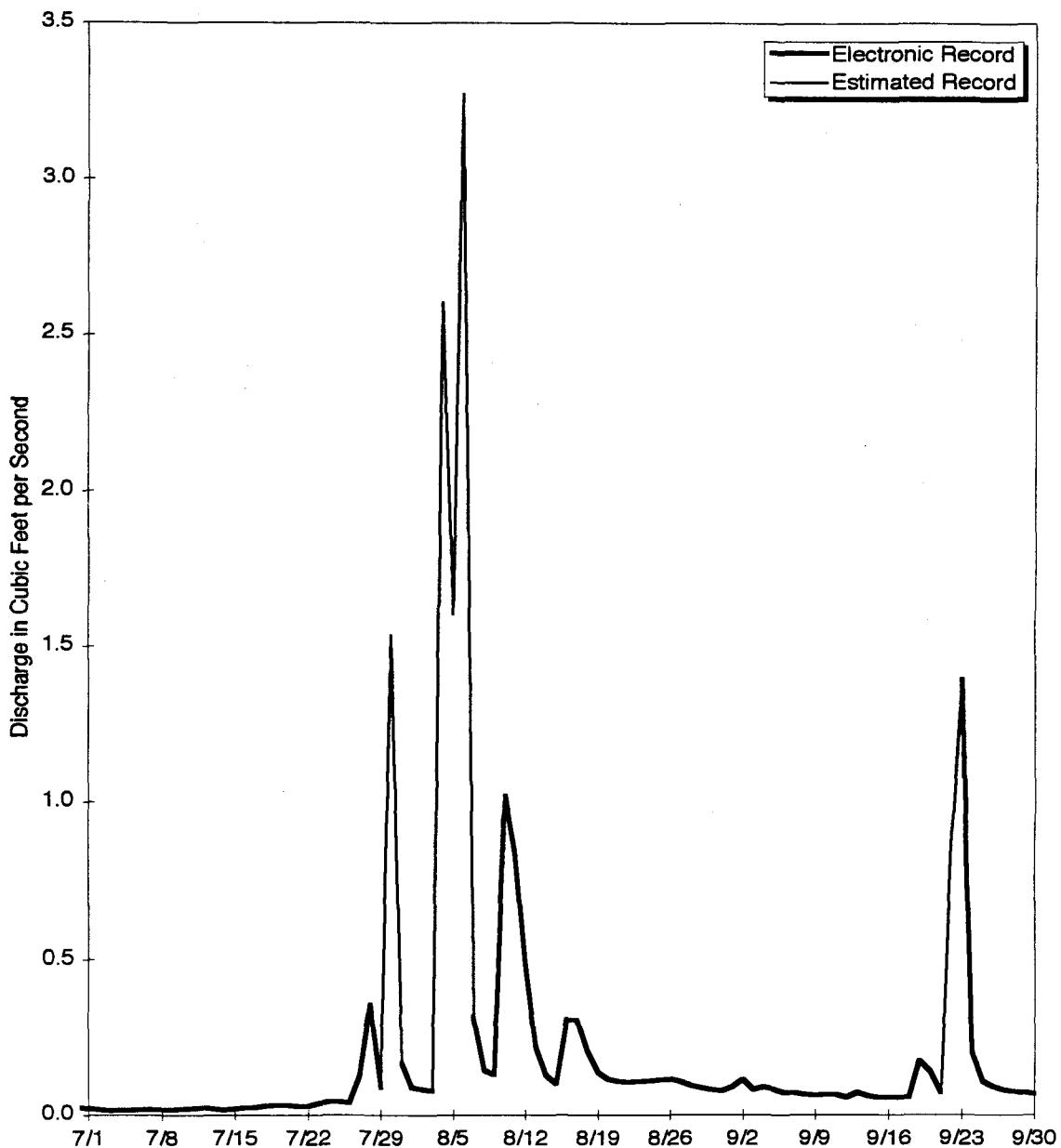
Date	April 1997	May 1997	June 1997	July 1997	August 1997	September 1997
1	0.055	0.375	0.108	0.022	0.089	0.090
2	0.266	0.299	0.102	0.018	0.083	0.116
3	0.166	0.287	0.096	0.014	0.077	0.081
4	0.901	0.252	0.092	0.016	2.602a	0.091
5	0.814	0.214	0.077	0.016	1.605	0.083
6	0.228	0.191	0.967	0.018	3.273a	0.071
7	0.172	0.157	0.530	0.019	0.319	0.072
8	0.128	0.129	0.154	0.018	0.144	0.066
9	0.109	0.122	0.032	0.018	0.129	0.064
10	0.137	0.114	0.053	0.020	1.023	0.065
11	0.398	0.186	0.064	0.022	0.839	0.066
12	0.472	0.153	0.109	0.023	0.490	0.057
13	0.370	0.130	0.203	0.020	0.217	0.072
14	0.242	0.166	0.417	0.017	0.128	0.062
15	0.220	0.151	0.134	0.020	0.100	0.054
16	0.243	0.132	0.123	0.023	0.307	0.055
17	0.181	0.126	0.102	0.025	0.306	0.054
18	0.142	0.133	0.089	0.029	0.205	0.056
19	0.127	0.128	0.078	0.031	0.138	0.175
20	0.118	0.122	0.067	0.031	0.115	0.142
21	0.112	0.153	0.064	0.028	0.109	0.071
22	0.100	0.441	0.056	0.028	0.106	0.869a
23	0.238	0.199	0.048	0.038	0.108	1.400
24	3.749	0.535	0.106	0.042	0.110	0.204
25	4.048	0.216	0.049	0.043	0.113	0.110
26	3.442	0.150	0.044	0.040	0.115	0.092
27	3.044	0.117	0.033	0.123	0.109	0.081
28	1.396	0.144	0.032	0.357	0.094	0.075
29	0.727	0.130	0.055	0.089	0.087	0.073
30	0.458	0.115	0.026	1.538	0.081	0.069
31	NA	0.108	NA	0.167	0.077	NA
Mo. Avg. (cfs)	0.760	0.189	0.137	0.094	0.429	0.155

Monthly Discharge					
Cubic Feet	1,970,287	507,499	355,034	251,553	1,149,126
Gallons	14,738,770	3,796,356	2,655,842	1,881,745	8,596,063
Acre-Feet	45.22	11.65	8.15	5.77	26.38

Note: Mean flow values are reported to the nearest 0.001 cfs, values less than 0.0005 cfs are reported as zero.

a Contains data estimated from field observations and electronic record at adjacent or comparable gages.

Gaging Station SW093 is located $39^{\circ} 53' 51''N$, $105^{\circ} 11' 48''W$, along North Walnut Creek at the 72" culvert 1000 feet above the Pond A-1 Bypass (See Section 4 Map). This station is a RFCA Action Level Framework and a New Source Detection Location and monitors water leaving the Site Industrial Area and entering the A-Series Ponds and North Walnut Creek. This station collects samples for selected radionuclides, metals, and water quality parameters using continuous flow-paced sampling.



**Figure 4-17 Mean Daily Discharge at Gaging Station SW093, Water Year 1997
(July, August, September 1997)**

Table 4-18 Gaging Station SW118: Mean Daily Discharge (Cubic Feet per Second)

Date	April 1997	May 1997	June 1997	July 1997	August 1997	September 1997
1	0.020	0.126	0.011	0.000	0.000	0.002
2	0.068	0.123	0.011	0.000	0.000	0.021
3	0.078	0.106	0.010	0.000	0.000	0.011
4	0.170	0.084	0.009	0.000	0.198	0.008
5	0.234	0.066	0.008	0.000	0.179	0.009
6	0.127	0.060a	0.067	0.000	0.480	0.004
7	0.088	0.055a	0.073	0.000	0.078	0.003
8	0.084	0.050a	0.042	0.000	0.025	0.000
9	0.076	0.045	0.041	0.000	0.015	0.000
10	0.104	0.039	0.025	0.000	0.141	0.000
11	0.137a	0.059	0.013	0.000	0.122	0.000
12	0.149a	0.073	0.012	0.000	0.095	0.000
13	0.133a	0.054	0.020	0.000	0.056	0.000
14	0.118a	0.059	0.048	0.000	0.023	0.000
15	0.113a	0.053	0.027	0.000	0.012	0.000
16	0.102	0.037	0.017	0.000	0.020	0.000
17	0.074	0.027	0.012	0.000	0.055	0.000
18	0.048	0.028	0.009	0.000	0.063	0.000
19	0.031	0.041	0.005	0.000	0.047	0.006
20	0.023	0.032	0.004	0.000	0.029	0.028
21	0.021	0.027	0.003	0.000	0.019	0.025
22	0.021	0.068	0.002	0.000	0.017	0.084
23	0.022	0.068	0.001	0.000	0.016	0.247
24	0.527	0.096	0.002	0.000	0.010	0.078
25	0.613	0.082	0.003	0.000	0.012	0.031
26	0.531	0.056	0.002	0.000	0.011	0.015
27	0.489	0.040	0.000	0.000	0.014	0.008
28	0.316	0.034	0.000	0.000	0.005	0.009
29	0.175	0.035	0.000	0.000	0.002	0.009
30	0.137	0.026	0.000	0.066	0.000	0.006
31	NA	0.018	NA	0.007	0.000	NA
Mo. Avg. (cfs)	0.161	0.057	0.016	0.002	0.056	0.020

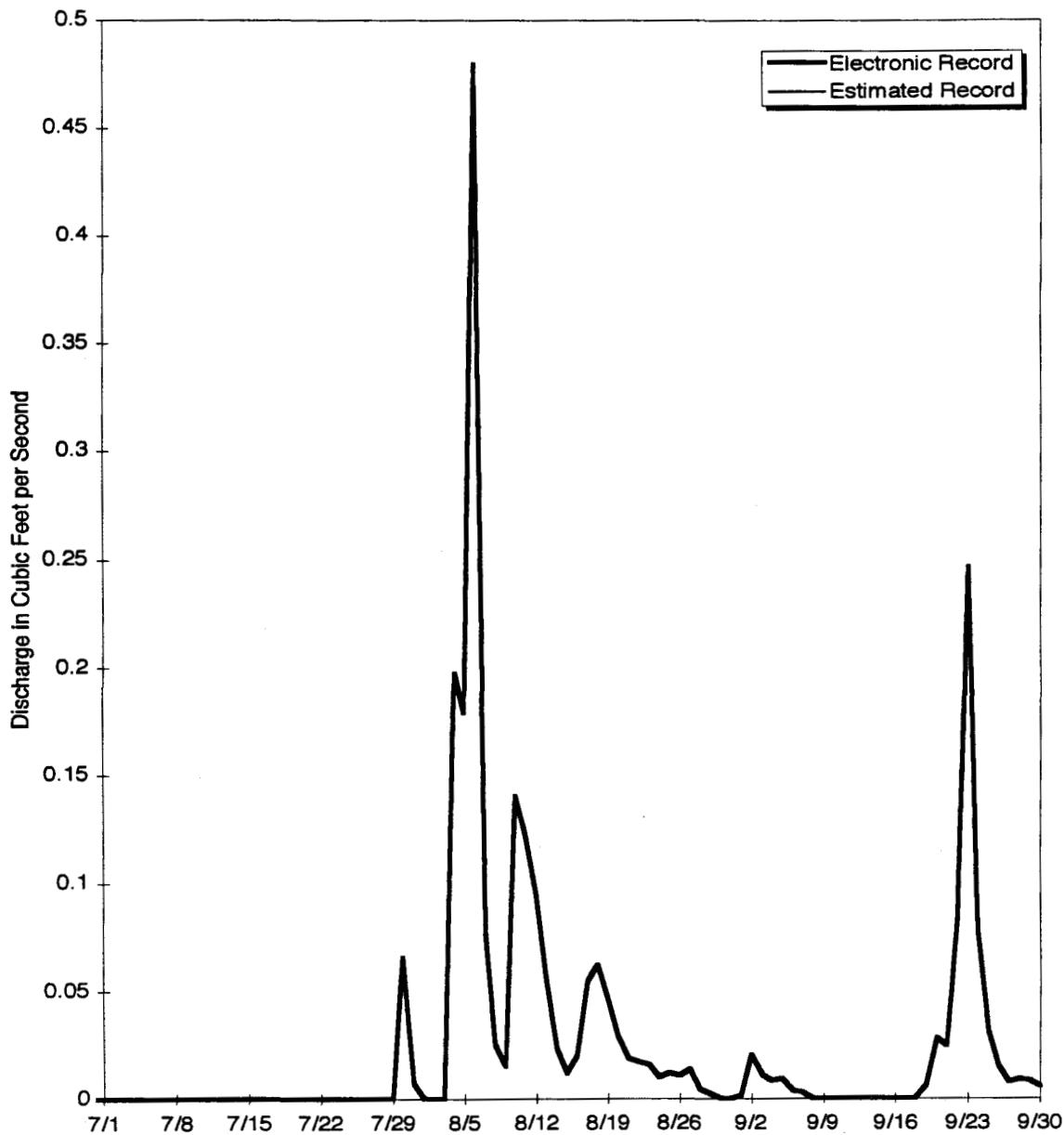
Monthly Discharge

Cubic Feet	417,116	152,774	41,059	6,320	150,532	52,139
Gallons	3,120,242	1,142,828	307,142	47,280	1,126,056	390,023
Acre-Feet	9.57	3.51	0.94	0.15	3.46	1.20

Note: Mean flow values are reported to the nearest 0.001 cfs, values less than 0.0005 cfs are reported as zero.

a Contains data estimated from field observations and electronic record at adjacent or comparable gages.

Gaging Station SW118 is located $39^{\circ} 53' 47''N$, $105^{\circ} 12' 16''W$, along North Walnut Creek above Portal 3 (See Section 4 Map). This station is a Buffer Zone Monitoring Location and monitors water leaving the NW portion of the Site Industrial Area and entering North Walnut Creek. No samples are collected at this location.



**Figure 4-18 Mean Daily Discharge at Gaging Station SW118, Water Year 1997
(July, August, September 1997)**

Table 4-19 Gaging Station SW134: Mean Daily Discharge (Cubic Feet per Second)

Date	April 1997	May 1997	June 1997	July 1997	August 1997	September 1997
1	0.000	0.280	0.000	a	0.000	0.000
2	0.000	0.000	0.000	a	0.000	0.000
3	0.000	0.000	0.000	a	0.000	0.000
4	0.002	0.000	0.000	0.000	0.133	0.000
5	0.000	0.000	0.059	0.030	0.029	0.061
6	0.000	0.000	0.013	0.000	a	0.000
7	0.082	0.055	0.001	0.000	0.000	0.000
8	0.000	0.000	0.000	0.000	0.178	0.000
9	0.000	0.000	0.000	0.000	0.000	0.000
10	0.000	0.000	0.000	0.000	0.009	0.000
11	0.001	0.000	0.101	0.000	0.000	0.000
12	0.000	0.036	0.000	0.000	0.092	0.000
13	0.000	0.000	0.000	0.000	0.000	0.000
14	0.000	0.000	0.004	0.000	0.030	0.000
15	0.000	0.000	0.000	0.064	0.000	0.085
16	0.000	0.032	0.000	0.000	0.000	0.000
17	0.000	0.000	0.063	0.000	0.000	0.000
18	0.122	0.000	0.000	0.000	0.000	0.000
19	0.000	0.000	0.000	0.000	0.052	0.000
20	0.000	0.000	0.000	0.000	0.008	0.000
21	0.000	0.000	0.000	0.000	0.000	0.000
22	0.000	0.000	0.000	0.000	0.000	0.040
23	0.000	0.000	0.000	0.055	0.000	0.009
24	0.035	0.057	0.000	0.000	0.000	0.000
25	0.028	0.000	0.000	0.000	0.041	0.000
26	0.024	0.000	0.000	0.000	0.000	0.206
27	0.001	0.038	0.000	0.000	0.000	0.000
28	0.000	0.000	0.065	0.001	0.000	0.000
29	0.263	0.000	0.017	0.000	0.036	0.085
30	0.275	0.000	a	0.017	0.000	0.000
31	NA	0.000	NA	0.000	0.000	NA
Mo. Avg. (cfs)	0.028	0.016	0.011b	0.006b	0.020b	0.016

Monthly Discharge

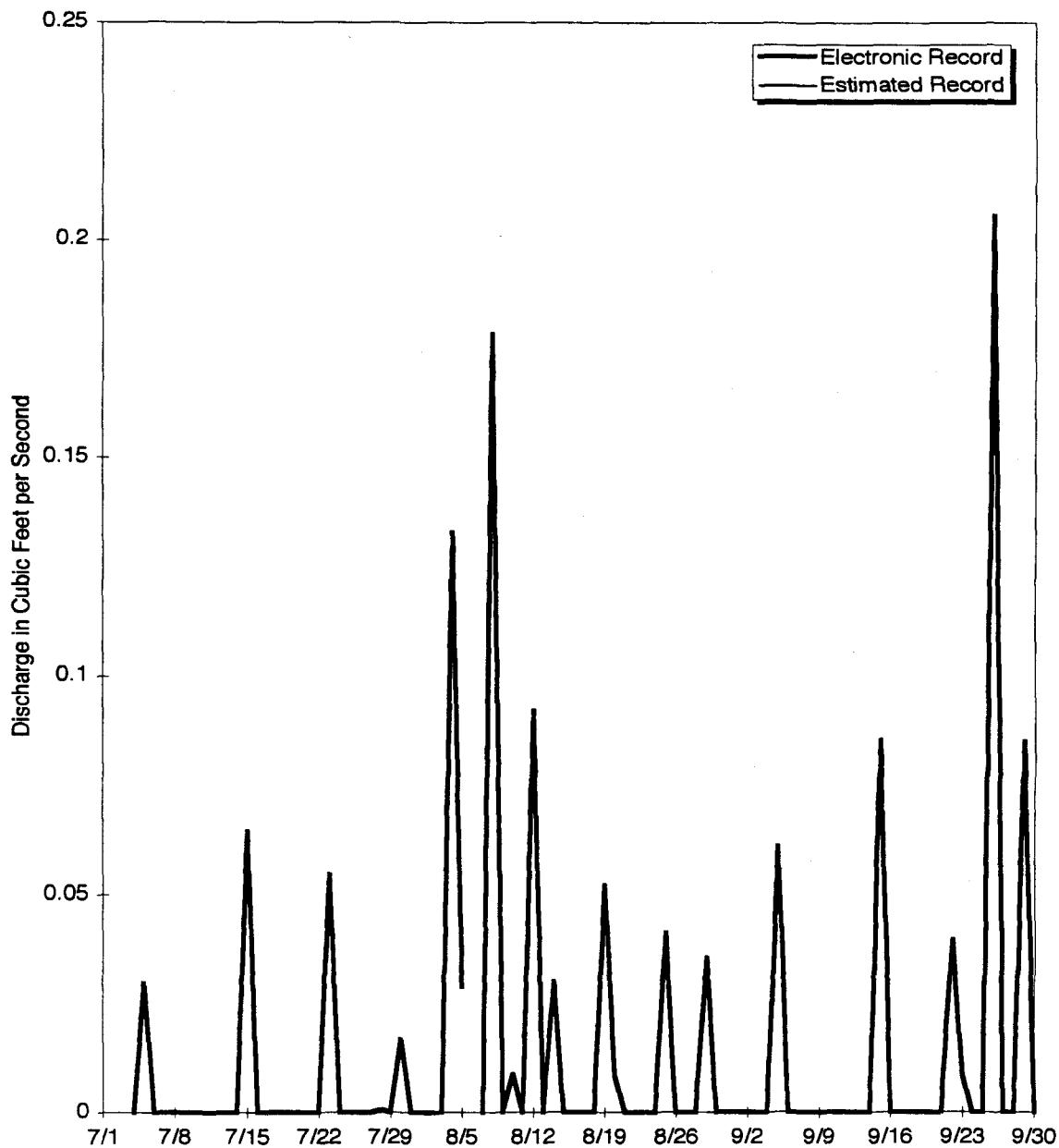
Cubic Feet	72,100	43,091	27,980b	14,355b	52,662b	41,996
Gallons	539,347	322,340	209,304b	107,383b	393,942b	314,150
Acre-Feet	1.65	0.99	0.64b	0.33b	1.21b	0.96

Note: Mean flow values are reported to the nearest 0.001 cfs, values less than 0.0005 cfs are reported as zero.

a No data available.

b Partial data.

Gaging Station SW134 is located $39^{\circ} 53' 31''N$, $105^{\circ} 13' 44''W$, at Rock Creek below Jefferson County Gravel Pit (See Section 4 Map). This station is a Buffer Zone Monitoring Location and monitors water pump discharged from gravel pits and entering Rock Creek. Storm event samples are collected for selected water quality parameters, metals, and major ions.



**Figure 4-19 Mean Daily Discharge at Gaging Station SW134, Water Year 1997
(July, August, September 1997)**

Section 4.2: Water Quality Data**Table 4-20 Radionuclides, 3rd Quarter 1997**

Loc	Sample Date	Pu-239, -240 (pCi/l)	Am-241 (pCi/l)	Total U (pCi/l)	Tritium (pCi/l)
GS01	05/29/97 - 08/13/97	0.010	0.012	a	170
GS01	08/13/97 - 09/01/97	0.008	0.012	a	180
GS01	09/01/97 - 09/30/97	b	b	a	220
GS03	05/15/97 - 06/25/97	0.465	0.256	a	b
GS03	06/25/97 - 06/27/97	0.165	0.018	a	0
GS03	06/27/97 - 07/01/97	0.184	0.056	a	300
GS03	07/01/97 - 07/06/97	0.000	0.024	a	50
GS03	07/06/97 - 08/05/97	0.002	0.002	a	100
GS03	08/05/97 - 08/08/97	c	c	a	c
GS03	08/08/97 - 08/29/97	0.028	0.008	a	250
GS03	08/29/97 - 09/10/97	0.023	0.004	a	250
GS03	09/01/97 - 09/04/97	0.000	0.015	a	86
GS03	09/04/97 - 09/09/97	0.009	0.019	a	130
GS03	09/09/97 - 09/24/97	b	b	a	0
GS03	09/24/97 - 09/27/97	b	b	a	230
GS03	09/27/97 - 10/01/97	b	b	a	240
GS08	09/24/97 - 09/26/97	b	b	b	a
GS08	09/26/97 - 09/30/97	b	b	b	a
GS08	09/30/97 - 10/10/97	b	b	b	a
GS10	06/16/97 - 06/23/97	0.005	0.048	3.526	a
GS10	06/23/97 - 06/30/97	0.274	0.100	3.069	a
GS10	06/30/97 - 07/08/97	0.056	0.061	2.748	a
GS10	07/08/97 - 07/16/97	0.028	0.032	2.377	a
GS10	07/16/97 - 07/23/97	0.026	0.043	2.196	a
GS10	07/23/97 - 07/31/97	0.107	0.075	1.539	a
GS10	07/31/97 - 08/04/97	1.460	0.497	3.782	a
GS10	08/04/97 - 08/06/97	1.910	2.210	3.809	a
GS10	08/06/97 - 09/01/97	0.070	0.468	2.375	a
GS10	09/01/97 - 09/18/97	0.077	0.130	2.950	a
GS10	09/18/97 - 09/23/97	0.427	0.687	1.924	a
GS10	09/23/97 - 10/02/97	b	b	b	a
GS11	06/25/97 - 06/27/97	0.002	0.009	2.037	a
GS11	06/27/97 - 07/01/97	0.000	0.004	1.486	a
GS11	07/01/97 - 07/06/97	0.003	0.009	1.693	a
GS11	08/05/97 - 08/07/97	0.000	0.000	1.506	a
GS11	08/29/97 - 09/01/97	0.032	0.005	1.194	a
GS11	09/01/97 - 09/04/97	0.054	0.008	0.964	a
GS11	09/04/97 - 09/08/97	0.027	0.006	1.179	a
GS27	07/28/97	2.100	0.431	0.632	a
GS27	07/30/97	3.170	0.641	0.736	a
GS27	08/04/97	6.190	1.370	0.822	a
GS28	07/28/97	0.509	0.089	0.905	a
GS28	07/30/97	0.852	0.240	1.408	a
GS28	08/04/97	0.667	0.110	1.648	a
GS32	07/28/97	2.550	0.937	0.927	a
SW022	07/28/97	0.357	0.121	1.244	a
SW022	07/30/97	1.180	0.182	0.955	a
SW022	08/04/97	6.000	0.517	3.017	a
SW027	05/01/97 - 08/05/97	0.005	0.026	0.989	a
SW027	08/05/97 - 08/06/97	0.084	0.010	0.307	a
SW027	08/06/97 - 08/13/97	0.032	0.015	0.675	a
SW027	08/13/97 - 09/23/97	0.005	0.004	0.359	a
SW027	09/23/97 - 11/07/97	b	b	b	a

Table 4-20 Radionuclides, 3rd Quarter 1997 (continued)

Loc	Sample Date	Pu-239, -240 (pCi/l)	Am-241 (pCi/l)	Total U (pCi/l)	Tritium (pCi/l)
SW091	08/04/97	0.958	0.686	5.232	a
SW093	06/16/97 - 06/24/97	0.003	0.003	4.472	a
SW093	06/24/97 - 07/01/97	0.004	0.007	3.446	a
SW093	07/01/97 - 07/21/97	0.001	0.010	5.620	a
SW093	07/21/97 - 07/29/97	0.208	0.037	3.153	a
SW093	07/29/97 - 07/30/97	0.224	0.247	1.816	a
SW093	07/30/97 - 08/01/97	0.037	0.026	1.353	a
SW093	08/01/97 - 08/04/97	1.330	0.628	3.516	a
SW093	08/04/97 - 08/06/97	0.085	0.044	0.970	a
SW093	08/06/97 - 08/12/97	0.020	0.036	0.966	a
SW093	08/12/97 - 09/01/97	0.002	0.016	3.941	a
SW093	09/01/97 - 09/18/97	0.002	0	4.642	a
SW093	09/18/97 - 09/23/97	0.018	0.033	1.923	a
SW093	09/23/97 - 10/06/97	b	b	b	a

a Not applicable.

b Incomplete analysis.

c Non-sufficient quantity.

Table 4-21 Metals, 3rd Quarter 1997

Loc	Sample Date	Be ($\mu\text{g/L}$)	Dissolved Cd ($\mu\text{g/L}$)	Cr ($\mu\text{g/L}$)	Dissolved Ag ($\mu\text{g/L}$)
GS10	06/16/97 - 06/23/97	undetect	undetect	undetect	undetect
GS10	06/30/97 - 07/08/97	undetect	undetect	undetect	undetect
GS10	07/08/97 - 07/16/97	undetect	undetect	undetect	undetect
GS10	07/16/97 - 07/23/97	undetect	undetect	undetect	undetect
GS10	07/23/97 - 07/31/97	undetect	0.1	1.9	0.08
GS10	07/31/97 - 08/04/97	1.4	undetect	18.8	undetect
GS10	08/04/97 - 08/06/97	1.1	undetect	20.9	0.09
GS10	08/06/97 - 09/01/97	0.47	0.12	5.3	undetect
GS10	09/01/97 - 09/18/97	a	a	a	a
GS10	09/18/97 - 09/23/97	undetect	0.06	6.2	undetect
GS10	09/23/97 - 10/02/97	a	a	a	a
SW027	05/01/97 - 08/05/97	undetect	undetect	1.7	undetect
SW027	08/05/97 - 08/06/97	undetect	undetect	0.9	undetect
SW027	08/06/97 - 08/13/97	undetect	undetect	1.3	0.09
SW027	08/13/97 - 09/23/97	undetect	0.09	1.6	undetect
SW027	09/23/97 - 11/07/97	a	a	a	a
SW093	06/16/97 - 06/24/97	undetect	undetect	undetect	undetect
SW093	06/24/97 - 07/01/97	undetect	undetect	undetect	0.04
SW093	07/01/97 - 07/21/97	undetect	undetect	undetect	undetect
SW093	07/21/97 - 07/29/97	undetect	0.05	1.9	undetect
SW093	07/29/97 - 07/30/97	0.77	undetect	8.8	0.05
SW093	07/30/97 - 08/01/97	0.56	undetect	3.9	0.04
SW093	08/01/97 - 08/04/97	1.1	0.09	10.7	undetect
SW093	08/04/97 - 08/06/97	undetect	undetect	5.5	undetect
SW093	08/06/97 - 08/12/97	undetect	0.08	2.6	undetect
SW093	08/12/97 - 09/01/97	undetect	undetect	undetect	undetect
SW093	09/01/97 - 09/18/97	a	a	a	a
SW093	09/18/97 - 09/23/97	undetect	0.07	1.8	undetect
SW093	09/23/97 - 10/06/97	a	a	a	a

a Not applicable.

Table 4-22 Water Quality Parameters, 3rd Quarter 1997

Loc	Sample Date	Hardness (mg/l)
GS10	06/30/97 - 07/08/97	210
GS10	07/08/97 - 07/16/97	195
GS10	07/16/97 - 07/23/97	190
GS10	07/23/97 - 07/31/97	90
GS10	07/31/97 - 08/04/97	150
GS10	08/04/97 - 08/06/97	90
GS10	08/06/97 - 09/01/97	150
GS10	09/01/97 - 09/18/97	190
GS10	09/18/97 - 09/23/97	78
GS10	09/23/97 - 10/02/97	a
SW027	05/01/97 - 08/05/97	100
SW027	08/05/97 - 08/06/97	90
SW027	08/06/97 - 08/13/97	98
SW027	08/13/97 - 09/23/97	68
SW027	09/23/97 - 11/07/97	a
SW093	06/16/97 - 06/24/97	296
SW093	06/24/97 - 07/01/97	300
SW093	07/01/97 - 07/21/97	330
SW093	07/21/97 - 07/29/97	180
SW093	07/29/97 - 07/30/97	80
SW093	07/30/97 - 08/01/97	110
SW093	08/01/97 - 08/04/97	140
SW093	08/04/97 - 08/06/97	70
SW093	08/06/97 - 08/12/97	100
SW093	08/12/97 - 09/01/97	250
SW093	09/01/97 - 09/18/97	310
SW093	09/18/97 - 09/23/97	90
SW093	09/23/97 - 10/06/97	a

a Not applicable.

Table 4-23 Hydrologic Water Quality Parameters and Major Ions, 3rd Quarter 1997

Location	Sample Date	TSS (mg/l)	Ca (mg/l)	Mg (mg/l)	Na (mg/l)	K (mg/l)	Cl (mg/l)	F (mg/l)	SO ₄ (mg/l)	HCO ₃ (mg/l)
GS01	08/06/97	<5.0	53.9	14.3	35.7	4.13	47	0.35	32	180
GS01	08/06/97	6	49.2	12.1	30.3	3.46	38	0.36	25	170
GS02	07/31/97	5	54.5	11.4	30.8	3.81	44	0.39	15	170
GS03	08/06/97	39	40	9.15	40.8	6.18	47	0.35	32	180
GS04	08/04/97	210	26.9	6.54	15.4	7.8	20	0.26	39	60
GS04	09/23/97	a	a	a	a	a	a	a	a	a
GS05	07/30/97	4300	37.8	25.9	4.45	19.1	4.4	<0.1	5	28
GS05	09/22/97	a	a	a	a	a	a	a	a	a
GS06	06/23/97	291	21.7	6.14	9.89	3.37	8.4	0.25	8.7	71.1
GS06	07/28/97	600	27.9	13.7	8.1	12.7	30	0.46	11	55
GS06	07/30/97	3400	33.7	21.6	5.97	18.3	12	<0.1	4	38
GS06	08/04/97	480	25.2	6.61	10.9	7.24	22	0.13	5	65
SW134	07/05/97	b	b	b	b	b	b	b	b	b
SW134	07/15/97	10	29.5	6.49	16.1	1.31	12	0.36	44	b
SW134	08/08/97	b	b	b	b	b	b	b	b	b

a Outstanding.
b Not collected.

Table 4-24 Sand/Sediment Split, 3rd Quarter 1997

Loc	Sample Date	Sieve Analysis (%)						
		0.75 Inches	0.375 Inches	#4 Mesh	#10 Mesh	#40 Mesh	#200 Mesh	<#200 Mesh
GS01	08/06/97	a	a	a	a	a	a	a
GS01	08/06/97	<1	<1	<1	<1	<1	50	50
GS02	07/31/97	a	a	a	a	a	a	a
GS03	08/06/97	<1	<1	<1	<1	<1	<1	100
GS04	08/04/97	<1	<1	<1	<1	33	<1	67
GS04	09/23/97	a	a	a	a	a	a	a
GS05	07/30/97	<1	<1	<1	<1	<1	<1	100
GS05	09/22/97	a	a	a	a	a	a	a
GS06	06/23/97	<1	<1	<1	<1	<1	67	33
GS06	07/28/97	<1	<1	<1	<1	5.9	12	82
GS06	07/30/97	<1	<1	<1	<1	3.8	3.8	92
GS06	08/04/97	<1	<1	<1	<1	<1	25	75
SW134	07/05/97	<1	<1	<1	<1	50	<1	50
SW134	07/15/97	<1	<1	<1	<1	25	50	25
SW134	08/08/97	<1	<1	<1	<1	2.2	2.2	96

a Outstanding.